

THE

RANGE and RIVER:

An Open Space and Recreation Plan for
South Hadley, Massachusetts: 2007-2012

As Approved by the EOEEA on July 20, 2007

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SECTION 1 - PLAN SUMMARY

The Town of South Hadley is unique in that it is located in a critical transition zone between developed urban centers to the south, and the more agricultural and rural communities to the north and east. This dichotomy serves as the single most important influence on the Town's growth and development and, hence, its' open space and recreation planning. Range and River – An Open Space and Recreation Plan for the Town of South Hadley, Massachusetts is intended to provide a basis for open space and recreation planning opportunities for the citizens of the Town of South Hadley consistent with this theme. Further, the plan focuses on protection and recreational development of the two major landscape features which dominate the landscape of South Hadley, the Mount Holyoke Range and Connecticut River, as well as, increasing recreational opportunities throughout the more developed southern section of Town.

This plan begins by describing the process of open space planning in South Hadley, as well as the various methods used for soliciting public input. The reader is then "introduced" to the Town in terms of its regional context, history, demographics, and growth and development patterns. This is followed by a discussion of the physical environment of the Town, its geologic origins as they influence soils and topography, a description of flora and fauna, water resources and primary environmental problems. An "inventory of lands of conservation and recreation interest" is also developed. Community goals are discussed and the community's open space and recreation needs are analyzed. Based on all these considerations, a five-year action plan is designed to implement the community's goals and objectives for open space and natural resource protection. This document represents the third update to the original Open Space Plan prepared in 1988.

As a preface to Section 9 - Five Year Action Plan is a summary of the accomplishments realized over the past five years within the Town of South Hadley.

SECTION 2 - INTRODUCTION

2.1 STATEMENT OF PURPOSE

Range and River - An Open Space and Recreation Plan for the Town of South Hadley, Massachusetts represents the third update of an ongoing comprehensive planning effort for the “acquisition and protection of development and restoration of open space and conservation lands in the Town of South Hadley”, which was the objective of the original five year Open Space Plan prepared by the Open Space Planning Committee and approved in December, 1988. Approval of this plan by the Executive Office of Energy and Environmental Affairs (EOEEA) enabled the Town to participate in the Division of Conservation Services (DSC) programs through December, 1993, and with approval of the updated 1993 plan, through 1998; with subsequent approval of the updated 1999 plan, through 2004.

The 1999 plan has now been updated in order that the Town may retain its eligibility for certain state and federal assistance programs and because the process is dynamic – not static. As such, this update represents the Open Space Committee’s effort to maintain an ongoing planning effort to protect and enhance the Town’s open space and recreational opportunities while balancing the use of open space for recreational purposes and protection for wilderness through the year 2012.

The targets and objectives of the updated five year plan (1999-2004) resulted in several important implementation activities that will continue and are expanded upon in this updated plan. The most notable implementation activities between 1999 and 2006 are set forth in various sections of this plan and are summarized in Section 9.1 as a preface of the newly adopted Five Year Action Plan.

The purposes of this updated plan are to establish new and revise short and long term goals and objectives for the preservation and protection of public open space in South Hadley, to ensure appropriate recreational use of the Town’s property, to promote further acquisition of land determined to be of benefit to the Town, and to retain the Town’s eligibility for certain EOEEA-DCS grant programs. These include Self-Help (Chapter 132A, Section 11), Urban Self-Help (Chapter 933, Acts of 1977 as amended) and Federal Land and Water Conservation (Public Law 889-578) funds which will allow for future acquisition of lands. Funds from these programs have been instrumental in the Town’s recreation and open space efforts.

- Between 1964 and 1992, the Town received \$430,000 in Self-Help funds to acquire nearly 500 acres of open space and recreation land.
- In 1975-1976, Bicentennial Canal Falls Park was developed through the use of Land and Water Conservation Funds.
- During the 1993-1999 period, South Hadley received \$600,000 for the acquisition of 244 acres of land dedicated for multi-purpose recreational use, and some 103 acres along Elmer Brook were purchased for public use under the Forest Legacy Program.

- In 2004, South Hadley received another \$500,000 in Self-Help funds to acquire approximately 288 acres along Bachelor Brook and Stony Brook to permanently preserve this important and diverse natural ecosystem.

Over 400 additional acres of land has been placed under the protection of the South Hadley Conservation Commission since 1993. A number of these parcels lie along rivers and streams, and others are located in the Mount Holyoke Range, meeting town goals to protect land in both of these areas. Town meeting has also given land to the Conservation Commission for protection to further other community goals of protecting scenic views, agricultural resources, and sites of environmentally significant habitat.

The Department of Conservation and Recreation acquired approximately 600 acres on the Mount Holyoke Range from Fire District #2 for permanent conservation purposes. This acquisition centered around the former Lithia Springs Reservoir. Additional lands, though of less acreage, on the Mount Holyoke Range were acquired by DCR in separate purchases from private property owners.

2.2 PLANNING PROCESS AND PUBLIC PARTICIPATION

Preparation of this update was undertaken in concert with the Town's broader planning efforts. The initial effort for this update began as part of the South Hadley Planning Board's work on a Community Development Plan in 2003-2004. This planning effort included work on elements addressing Open Space and Natural Resource Protection, Housing, Economic Development, and Transportation. This approach to open space planning provides a more holistic and comprehensive context for open space and recreation planning. The next update, actually a wholesale rewrite of the plan, will be undertaken as an element of a Comprehensive Plan over the next 3 years.

A key component of the 2003-2004 work was public involvement through a survey effort conducted by the Pioneer Valley Planning Commission and a series of public forums including one which focused almost exclusively on Natural Resources and Open Space. Computer mapping of vital resources, beyond that which was conducted for the previous Open Space plans and subsequent updates, was also a key aspect of the Community Development planning effort.

The survey effort involved mailing of 950 surveys to households. As part of the survey effort, articles were published in the newspapers and flyers posted around town to encourage recipients to respond to the surveys. Responses were received from one-third of the households (this compares to a typical community survey response of 15% to 25%). Efforts to encourage more surveys through South Hadley's Know Your Town (KYT) Committee were not successful. Therefore, the 2003 surveys were used as the basis for community attitudes, supplemented by input at the public forums which were conducted.

Using the Open Space and Natural Resource Protection element of the 2004 Community Development Plan and the 1999 Open Space Plan as the beginning points of reference, the Town Planner working with other Town officials and boards, prepared a draft of this update. Copies of this draft plan were submitted to the various departments and boards (including the Planning Department, Conservation Commission, Recreation Department, Golf Commission, Parks and Playgrounds, School Department, and the Canal Park Committee) for their review and comment.

Following review by the various departments and boards as noted, this plan was revised and submitted to the Selectboard. The Selectboard in a public meeting on June 26, 2007 reviewed this plan. Subsequent to the public review, on June 26, 2007, the Selectboard unanimously approved submittal of the proposed plan.

SECTION 3 - COMMUNITY SETTING

3.1 REGIONAL CONTEXT

The Town of South Hadley occupies approximately 11,712 acres (18.41 square miles) and is bounded by the southern slopes of the Mount Holyoke Range to the north and the Connecticut River to the west. It is situated at the southern edge of Hampshire County and within the land of the Pioneer Valley. For any given community, certain regional characteristics often serve to influence open space and recreation planning to the greater extent than others. This is particularly true for the Town of South Hadley with respect to both the Mount Holyoke Range and the Connecticut River.

Although much of the land within the Pioneer Valley is primarily Connecticut River floodplain, the boundary which South Hadley shares with Hadley straddles a large portion of one of the few mountain ranges in Eastern North American which runs from east to west. This orientation provides a sharp contrast between the types of vegetation found on the north and south facing slopes of the range.

Mount Holyoke Range. The Mount Holyoke Range in South Hadley is a chain of mountains stretching from Mount Holyoke at the eastern bank of the Connecticut River in an easterly direction to Bare Mountain. The gaps, or so-called “notches” which occur between the individual peaks in the chain, are a result of the cracking of underlying volcanic basalt by geologic faults, followed by erosion of the cracks over time. The Range’s distinctive profile dominates South Hadley’s skyline. The significance of the Mount Holyoke Range to the community and the region cannot be overstated.

The cultural, recreational and economic aspects of South Hadley have been historically influenced by a dramatic variation in landforms: from the nearly level Connecticut River floodplain of the south and west, through gently sloping, fertile eastern terraces, to the steep intrusive outcroppings of the Mount Holyoke Range which rise to elevations of over 800 feet above the valley floor to the north. Together, these two aspects of South Hadley’s physical environment, the range and the river, serve to create a strong base for recreation and open space planning, not only within the Town of South Hadley but also within a regional context both to the north and south as well as to the east.

The bony spine of the Mount Holyoke Range defines the entire northern boundary of South Hadley. Included in this area is a large portion of the Joseph Allen Skinner State Park, approximately 86 acres of which are located within South Hadley. A six (6) mile segment of the Metacomet-Monadnock Trail (familiar to many of the more adventurous of the region’s inhabitants) traverses the ridgeline of the Mount Holyoke Range along the northern border of South Hadley through the Skinner State Park. Another 5.5 miles of the Trail continues easterly through the Mount Holyoke Range State Park along the Granby-Amherst-Belchertown borders. Recent efforts have been

made to make the entire Metacomet-Monadnock Trail from Long Island Sound to New Hampshire into a National Scenic Trail. Also, included in the state park is the Summit House, which housed a very popular and prestigious resort and restaurant during the nineteenth century.

Built in 1851 as a hotel, complete with a steam-powered tramway and 70 guest rooms, the “Prospect House” drew distinguished guests and internationally known celebrities such as Charles Dickens, William Wordsworth and Jerome Napoleon Bonaparte. Those who retreated here were, typically, the wealthy who could afford the time and money to get away. The resort managed to survive its harsh mountain environment until 1938 when the tramway and most of the buildings on site were destroyed in the powerful hurricane of that year. The Mount Holyoke Summit is nationally important for its historical and cultural attributes. The view of the Oxbow from Mount Holyoke after a thunderstorm was the setting for Thomas Cole’s 1836 painting which led to the Hudson River Romantic painting period which culturally dominated early American art.

The overgrown remains of the cable car track that served to transport visitors to the top are still present upon the slopes below the former hotel. The so-called Summit House is currently owned and operated by the Department of Conservation and Recreation (DCR) as part of the Mount Holyoke Range State Park. In 1988, the DCR completed renovations of the remaining hotel structure and the building now serves as a historic site, information center and scenic viewing area offering panoramic views of the Connecticut River Valley and the Town of South Hadley.

The history of the Mount Holyoke Range State Park actually began in the year of 1940 with the donation by Joseph Allen Skinner to the DCR (formerly DEM) of the remains of the “Prospect House” and 375 adjoining acres of mountainous land. Until the mid-1950’s, the Park was operated as a passive recreation area with the emphasis on trail use. In 1953, the first long-range acquisition and development planning was proposed for the area. It was not until the formation of the Mount Holyoke Range Citizen’s Advisory Committee (HRCAC) in 1969, however, that planning was actually taken seriously, resulting in “A Plan for the Protection of the Mount Holyoke Range” in 1973. With this proposal, the DCR established its primary objective for the Mount Holyoke Range State Park: to preserve the scenic and recreational values of the range. This was to be accomplished through the acquisition of all unprotected lands above an elevation of 450 feet, as well as other lands located below this baseline, which meet the above scenic and recreational objectives.

The resulting “ultimate acquisition boundary” map, endorsed by the HRCAC in 1982, outlined approximately 5,000 acres targeted for protection, 2,000 of which were, at the time, already under public ownership of some type. In 1975, acquisition began in earnest with the purchase of 320 acres in Amherst. To date, over 2,500 acres have been added to the total Mount Holyoke Range State Park system. Currently, public use of the park centers around relatively “passive” recreation only, including year-round hiking, cross-country skiing, limited snowmobiling, horseback riding, and limited

picnicking. Motorized recreational vehicles are prohibited due to the potential for erosion impacts, and hang-gliding, though tolerated, is not actively promoted on the mountain.

The Mount Holyoke Range was designated by Scenic America in 2000 as one of ten “Last Chance Landscapes” due to the threat of development and relative lack of controls.

In 2001, the Kestrel Trust, a local land trust serving the Pioneer Valley area, working in partnership with other organizations and municipalities throughout the Mount Holyoke and Mount Tom region held a “Summit on the Range” and launched an initiative to encourage more regional consideration of the Mount Holyoke Range and the Mount Tom Range on the west side of the Connecticut River. This initiative began with the day-long community planning session where people from throughout the region met to consider issues and concerns confronting the Mount Holyoke Range. Subsequently, the Kestrel Trust and Pioneer Valley Planning Commission cooperated with regional municipalities and nonprofit organizations in an effort to create a regional framework for protection of the Mount Holyoke Range. This effort included a Memorandum of Agreement signed by the various communities committing to take actions to protect the resources of the range. Other related steps included work on a model Zoning Bylaw amendment to regulate development on the Mount Holyoke Range.

Connecticut River. Over six and one half miles of the Connecticut River form the western boundary of the Town of South Hadley. South Hadley joins the cities of Holyoke, Chicopee and Springfield, and the towns of Agawam, West Springfield and Longmeadow to comprise the so-called “urban riverfront”. This important section of the river (also known as the “urban reach”) is described in a September 1987 study by the Connecticut River Action Program as one of four distinctive “reaches” of the river’s 68-mile course through Massachusetts. The Connecticut River Action Program was established in the Summer of 1984 by the DCR to work with riverside communities on long-term planning initiatives for the cleanup and protection of the Connecticut River corridor.

As part of the relicensing of the Holyoke Dam, the Federal Energy Regulatory Commission (FERC) in 2000 required measures to protect a portion of the property along the Connecticut River, Bachelor Brook, and Stony Brook. Northeast Utilities established a Conservation Restriction with Holyoke Gas & Electric (HG&E) for a depth of 300 feet along the Connecticut River on properties then-owned by Northeast Utilities along the Connecticut River, Bachelor Brook, and Stony Brook. After acquiring the Holyoke Dam and some related properties from Northeast Utilities in 2001, to fulfill its requirements under the FERC license, HG&E began planning development of a riverfront park in the South Hadley Falls area, developed a Conservation Restriction on Cove Island, established new licenses for occupants of Cove Island, and began developing a dock and water withdrawal permitting system to regulate activities along the Connecticut River.

With a collective population of over 350,000, according to the 2000 U.S. Federal Census Decennial, the urban reach of the river offers opportunities unavailable in many urban environments, including water-based recreational activities, such as canoeing, fishing and riverside strolls. The strong presence of this major water resource in South Hadley serves to provide not only aesthetic beauty, but also opportunities for the psychologically soothing effects that such a water oasis can offer people living in an urban setting. Development of the historic riverfront park encompassing the Gatehouses above the dam and the passive recreation area below the Texon Building, as required by FERC and the Corps of Engineers, will significantly enhance community use.

Situated less than twenty miles from prominent industrial, commercial, and educational centers, South Hadley is a bedroom community to surrounding municipalities including Springfield, Chicopee, Holyoke, Westfield, Northampton and Amherst (which houses the largest employer in the region, the University of Massachusetts). However, South Hadley also enjoys an industrial, commercial and educational base of its own. Intellicoat (formerly Rexam Graphics) is located in South Hadley Falls and the Industrial Drive/New Ludlow Road Industrial district has continued to develop and attract new tenants. However, the Town is running out of land available for industrial use.

Commercial development has been largely characterized by a few large centers (The Village Commons, the Big Y Center on Newton Street, and the Big Y Center on Willimansett Street). Other commercial developments have generally consisted of small shops/office developments or restaurants on Newton Street or Granby Road.

Further adding to the Town's frame and character is Mount Holyoke College, a prestigious educational institution founded in 1837 as the first women's college in the United States. The College also owns considerable amounts of open space including a tract on the Mount Holyoke Range and an historical golf course. Presently, the Town's inhabitants enjoy a predominantly residential environment in close proximity to major employment and service centers and within a forty-five minute drive from Bradley International Airport in Enfield, Connecticut.

3.2 HISTORICAL OVERVIEW

1. BECOMING A MUNICIPALITY

According to the Historical Review – Town of South Hadley 1753-1953 compiled by H.L. Goodwin, F.A. Brainerd, R. Barrett and P. Adams, Hadley, the so-called “Mother town” of what is now known as South Hadley, was originally settled in 1661 by colonists from Hartford and Wethersfield, Connecticut. These settlers traveled north to find a land well endowed with very rich soils. This condition would form the basis for a very successful agricultural community, a success which persists to the present day. As was most of the Pioneer Valley during the

seventeenth and early eighteenth centuries, the Town of Hadley soon became a predominantly agricultural community with a strong affiliation to churches of different denominations. In 1727, the settlers south of the Mount Holyoke Range petitioned the General Court to grant them permission to be established as a separate precinct. The advantages to this proposal centered around the issue of local worship as an alternative to observing the Sabbath at the parent church in Hadley eight miles north.

The journey to church involved the laborious task of traversing the Mount Holyoke Range through gaps between the mountain peaks, commonly known at the time as “the cracks”. In light of this hardship, the General Court finally agreed to grant the parishioners their precinct, but not without a number of attached conditions. This list included construction of a meeting house, selection of a minimum number of settlers, and the settlement of a minister within a given period of time. Having met all but one of the requisites by 1732, South Hadley was granted a second opportunity for a precinct with the stipulation that they settle an orthodox congregation, and proceeded to erect a parsonage for the Harvard graduate.

Pursuant to an order by the British Government to the Governor of Massachusetts prohibiting the establishment of any town requiring representation in the legislature, the precinct was precluded from becoming its own political entity. Precinct status, however, would soon yield to “district” establishment, complete with powers of authority similar to those of a town, but without the rights of representation in the General Court. District representation soon followed the war for independence, and in 1786, a declaration granted that all Districts established prior to 1777 were to become officially incorporated towns.

2. THE IMPACT OF RIVER TRANSPORTATION

Some of the Town’s early engineering and construction projects were to earn national recognition. The canal, which began in 1795, was the first commercially-operating navigational canal. It was completed during a two-year period ending in 1795 as a way of overcoming the obstacle formed by the natural falls of the Connecticut River at the southern portion of the Town of South Hadley. The canal covered a distance of approximately two and one half miles through swamp and bedrock, beginning just north of what is now called Cove Island and continuing to a point just below the South Hadley and Chicopee line.

This wondrous engineering solution transported vessels over a 53-foot drop at the “Great Falls” at South Hadley and removed a serious obstacle to the free shipment of goods between upriver towns and larger regional centers in Springfield, Hartford, and New York. The first version of the canal included a 275-foot long “inclined plane” which was used to raise and lower the riverboats from above and below the falls. In 1805, this canal was altered to include a series of locks for the purpose of creating greater draft for larger riverboats. This technology was the first

of its kind to be employed and served as a model for the construction of canal systems throughout the country.

With the transformation of the formerly agricultural South Hadley Falls into a community known throughout as “Canal Village”, the area soon began to prosper. Travelers and riverboat workers found the growing need for eating and drinking establishments, entertainment and overnight lodging in the area. Taverns began to pop up everywhere to serve an expanding number of people moving an increasing volume of freight through the canal. Local merchants were beginning to take full advantage of an economy which was flourishing as a result of both the canal and the several mills which were highly active throughout the area. The mills of the era included such varied types as saw, grist, shingle and plaster, to name a few.

In addition, the canal served to attract the first tourists to South Hadley. “Man-made” features such as this were rare at the time and tended to draw sightseers from miles around, often to stay the night at The Tavern, a common meeting place of the Proprietors of Locks and Canals. The Proprietors were the legal entity empowered by the State Legislature as the authorizing entity charged with making the Connecticut River navigable to boats from the confluence of the “Chicopee River” northward to the furthestmost limits of the Commonwealth of Massachusetts. It is interesting to note that, in contrast to the more familiar present-day regional attractions of South Hadley, the natural geologic amenities of river networks, mountains, foliage and open spaces, it was the canal, a “man-made” structure, which drew the first sightseers to South Hadley from all over the surrounding countryside during the colonial period.

The popularity of river transportation systems, primarily involving the flat bottom boat, continued into the 19th century. Though many of the flat bottom boats which traveled the river were propelled by sail, most often they were pushed by planting “setting-poles” into the river bottom and walking the length of the deck from bow to stern, and then carrying the pole back to the bow to repeat the process. This was the routine executed as the boats carried loads of stone, shingles, hides and lumber as far north as White River Junction, Vermont, and returned with heavier cargo such as iron, sugar, grindstones, salt and occasionally rum. The trip from Hartford to Wells River, Vermont took approximately sixteen days to complete, and the return trip took about half as long.

The most prosperous period in operation of the Proprietors of Locks and Canals proved to be between the years 1808 and 1847. With the development of the steam engine in the 1820’s, the flat bottom boat owners began to adopt this technology in the operation of their own vessels. In 1826, “The Barnet”, owned and operated by the Connecticut River Navigation Company of Hartford, became the first steam boat to pass through the South Hadley Canal locks. The canal peaked in operation in the year 1833 when it reached a total of \$20,016 in tolls collected.

Ironically, however, steam technology would ultimately spell disaster for the use of the river as a principle navigational system, as development of the railroad and the steam locomotive began to intensify. Finally, on Thanksgiving Day 1847, the last steamboat passed through the canal.

During the mid-19th century, use of the canal for navigation began to decline seriously with the construction of the 1848–1849 water power dam and the move of transportation facilities from water to rail systems. Eventually the canal system was employed by the paper mills to harness the hydrologic power for consumption by their facilities.

According to some historians, it was the country's first commercially-operating navigational canal which brought prosperity to the communities of South Hadley and Holyoke; a prosperity which persists to a great extent today. In December, 1992, the National Park Service placed the South Hadley Canal District on the National Register of Historic Places commemorating the rich history of this engineering and cultural wonder. Only canal remnants may be seen today due to the filling of segments of the canal and submergence by the rising river level. Most of the canal has been covered over by the development of the human environment and other parts have been grown over by maturing vegetation as it experiences the process of ecological succession. Located along eastern portion of the peninsula commonly referred to as Cove Island are the skeletal remains of what was once the northern section of the famous South Hadley Canal. Despite its overgrown condition, select portions of the old canal are still navigable by canoe.

3. CROSSING THE RANGE

At the western end of the Mount Holyoke Range, at the base of Mount Holyoke, lies the site of a narrow gorge called The Pass of Thermopylae. As history recalls, this is the location at which early settlers began construction of a route through the range. Clearing of the Pass was accomplished through the curious method of pouring water over exposed rock within the intended passageway, allowing the rock to freeze, and raking away the resulting debris.

A second passageway to the North used by the early settlers was the natural migratory path through the Mount Holyoke Range at "Round Hills Pass", now known as "The Notch". The construction of a road connecting Amherst and Granby through this pass, later to become Route 116, was recognized as a major regional accomplishment of the late 18th century era. This access continues to be the primary passageway across the range.

4. THE COLLEGE

Mount Holyoke Seminary located in the eastern section of South Hadley was founded in 1837 by Mary Lyon as the country's first institution dedicated to the

higher education of women. This occurred 200 years after the first men's college was established.

With the establishment of the Seminary, which finally became Mount Holyoke College in 1893, came acquisition and protection of the many expanses of open spaces which today forms the campus. In subsequent years, the college would acquire more land for its expansion to include a golf course, wooded areas with nature trails, and athletic fields.

5. EARLY DEVELOPMENT PATTERNS

Beginning in 1892, South Hadley embarked upon a development technique which spread through the Town as more and more land was developed. The first standard subdivisions were planned at the location of Canal, North Main and Abbey Streets. Despite being used in the Town since 1892, the typical subdivision was not a land consumptive pattern until after the Second World War.

The post-war era marked the point at which that the rectilinear "cookie cutter lot" subdivisions became standard practice for most residential developers capitalizing on the pledge to provide a "decent home for every working American". This pattern is clearly represented by subdivisions off of Newton Street, just north of the Falls Village area at Lincoln, Roosevelt, Washington, and McKinley Avenues. This type of housing development forms the structure of development that exists today in South Hadley. Together, the aforementioned occurrences created the patterns which were instrumental in the evolution of the Town as its character shifted from an agricultural to an industrial and commercial economy, and finally to the predominantly bedroom community that it is today. Maps 1 and 2 indicate the growth in the roadway development pattern between 1865 and 2007.

3.3 POPULATION CHARACTERISTICS

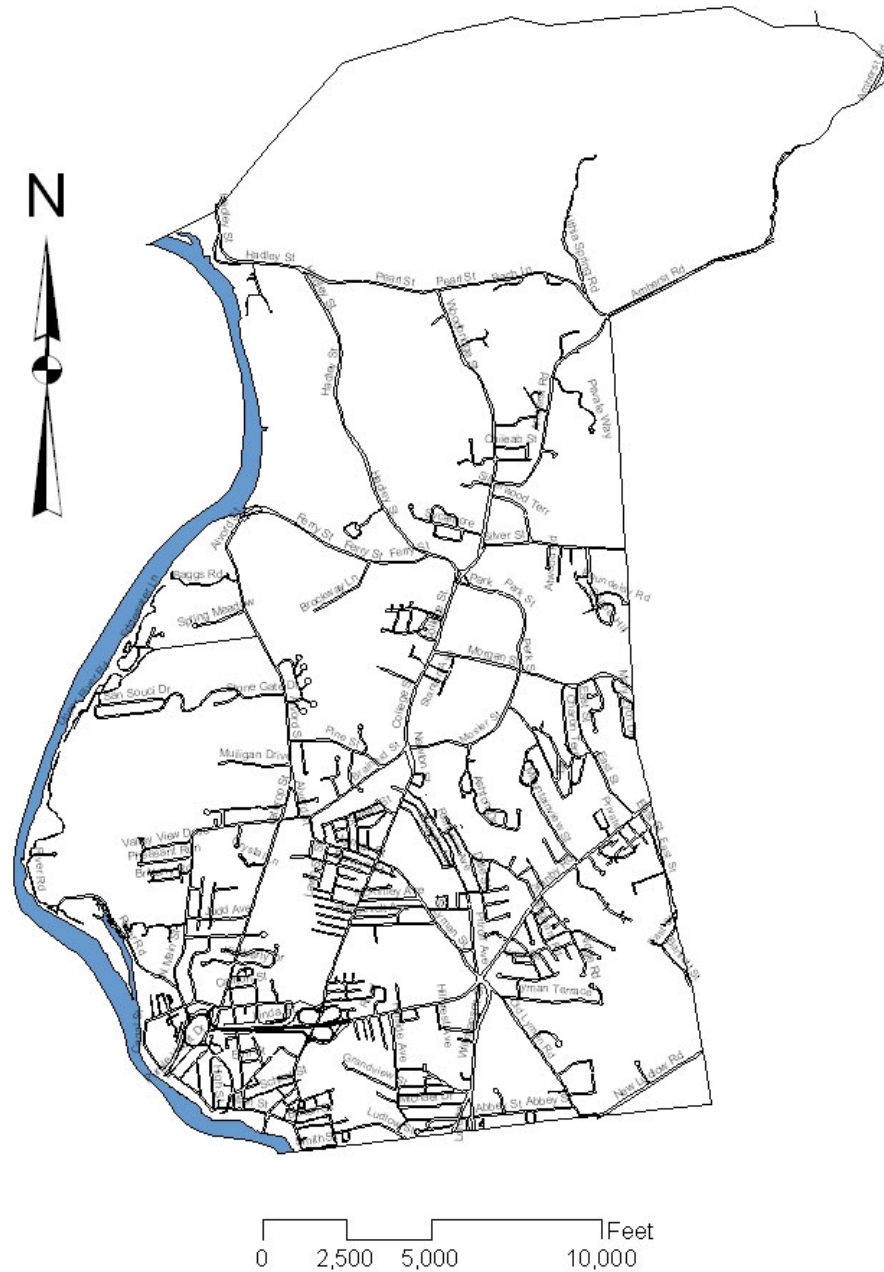
The 2000 U.S. Federal Decennial Census showed South Hadley had a population of 17,196 persons which represented a 3% increase over the 1990 population. This rate of increase reflected a nearly doubling of the growth rate as the Town only grew by 1.7% during the 1980's. Recent projections by Mass. Institute for Social and Economic Research (MISER) indicate a continuation of this steady growth through 2020 with a modest increase of approximately 5.3% (see Table 1 and Figure 1). Even this modest growth, when reflective of a lower-density pattern of development, could have dramatic impacts on the town's landscape and public services. This growth has had, and will continue to have, significant impacts as to the availability of open space and recreational amenities. Such growth will result in increased housing needs which will, in turn, induce increased building and development which will continue to draw families in town. These impacts are reflected in the increased level of condominium and subdivision development over the past 10 years.

Map 1

Map of South Hadley in 1865

(Available at Planning Board Office for Review)

MAP 2 Map of South Hadley - 2007



Source: South Hadley Planning Board, 2007

Phase out of the Westover Air Force Base as a Strategic Air Command (SAC) Air Base resulted in significant decline in population in the early 1970's (See Table 1 and Figure 1). With the exception of that "event", the Town has and continues to show steady positive growth through the year 2000. Projections through 2020 show a continuation of this increase in the rate of growth for the next 2 decades.

Three census periods of data on age distribution of the population provides a good picture of the changing face of South Hadley. In 1980, 35% of the population was in the 20-45 year age group, this level increased to 40% in 1990, but fell again to 35% in 2000 (see Table 2). The pre-teen segment (0-9 years of age) mirrored this pattern. During the same 20 year period, the 65 years and over population steadily increased in numbers and share of the population from 11.9% in 1980, 15.5% in 1990 to 17.4% in 2000. Significant as well is the steady decline in the relative size of the teenage population from 21.2% in 1980 to 16.7% in 1990 to its most recent low point of 15.3% in 2000.

Recent housing developments have focused on the 55 years and over population. Few developments are focusing on serving the housing needs of families and youth. Most of the developers in recent years have indicated they are marketing their housing to this aging segment of the population. Therefore, the shift over the last 2 decades towards a more mature age segment is likely to intensify.

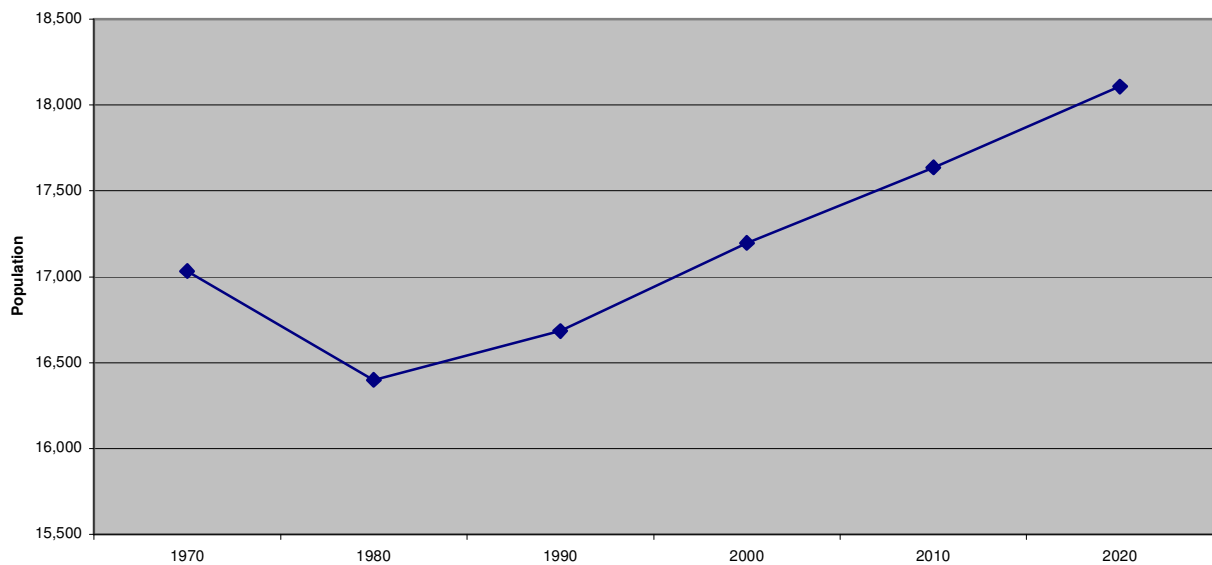
The relative decline in the younger population segments and growth in the mature age segments has significant implications for a variety of planning issues. The type of recreation programs and public facilities that the residents will desire can be expected to shift. Recreation and social service planning will need to accommodate these changes.

TABLE 1
TOWN OF SOUTH HADLEY
POPULATION 1970 - 2000 AND PROJECTIONS 2010 & 2020

<u>YEAR</u>	<u>POPULATION</u>
1970	17,033
1980	16,399
1990	16,685
2000	17,196
2010	17,636 (Projection)
2020	18,108 (Projection)

Sources: 1970, 1980, 1990, 2000 U.S. Federal Decennial Census.
MISER Population Projections for 2010 and 2020, University of Massachusetts.

Figure 1
South Hadley Population: 1970-2020



Sources: 1970, 1980, 1990, 2000 U.S. Federal Decennial Census.
MISER Population Projections for 2010 and 2020, University of Massachusetts.

TABLE 2
TOWN OF SOUTH HADLEY
POPULATION BY AGE GROUPS 1980 - 1990

	1980		1990		2000	
Age Group	Population	Percent	Population	Percent	Population	Percent
0-4	692	4.2	895	5.4	783	4.6
5-9	805	4.9	857	5.1	945	5.5
10-14	1,108	6.8	827	5.0	1,015	5.9
15-19	2,364	14.4	1,625	9.7	1,616	9.4
20-24	2,121	12.9	1,935	11.6	1,588	9.2
25-44	3,646	22.2	4,776	28.6	4,406	25.6
45-54	1,786	10.9	1,573	9.4	2,300	13.4
55-64	1,932	11.8	1,615	9.7	1,552	9.0
65-74	1,210	7.4	1,571	9.4	1,447	8.4
75+	<u>735</u>	<u>4.5</u>	<u>1,011</u>	<u>6.1</u>	<u>1,544</u>	<u>9.0</u>
TOTAL	16,399	100.0	16,685	100.0	17,196	100.0

Source: 1980 U.S. Census STF-1A
1990 U.S. Census STF-1
2000 U.S. Census STF-1

According to the 2000 U.S. Census (CPH-L-83-1990), the median household income in 1999 for the Town was \$46,678. Of those employed over 16 years of age (9,085 people), slightly over half were employed in the various service sector businesses while manufacturing, wholesale trade, and transportation and related industrial sectors accounted for only 20% of the employment. Retail trade employed 13% of the workforce. Various levels of government accounted for 14% of the employment.

Commuting patterns for those employed according to the Census figures, show that 84% of those employed drove to work with two-thirds of them commuting to locations outside of the town. This is consistent with the “bedroom community” nature of the town where people reside and return at the end of the working day. Reflecting the advent of home computers, 4% of the workers work at home. Both concepts have resulted in the steady growth of the residential community which will require enlarged and/or new recreational opportunities, both active and passive, to meet the needs and correspond to the characteristics of this growing population.

The five (5) largest private employers (excluding the Town itself) include Mount Holyoke College, Intellicoat (formerly Rexam Graphics), Big Y food stores, Wingate at South Hadley (formerly Meadowood Nursing Home), and Canson-Talens, Inc. While these businesses are located throughout Town, there are numerous additional business and industrial plants located at the industrial park in the southeastern part of Town. Lots available at the park, which is zoned for industrial use, with complete infrastructure available, provide the opportunity for new industries to locate there.

3.4 GROWTH AND DEVELOPMENT PATTERN

1. PATTERNS AND TRENDS

South Hadley was established by the General Court as a district with its own local self government separate from Hadley in 1753. It was then incorporated as a town with its own representation in General Court in 1775. The centers of growth and development came as a result of the canal and incline plane in 1794 in the southern part of town and in the central area of town with the establishment of Mount Holyoke Seminary in 1837. Transportation routes, in particular, County ways, provided a framework for development up to the present time.

In the early 1900's, there were several subdivisions of land for development, but it was not until 1946 that the Town approved its first Zoning By-Law and 1954 when the Subdivision Regulations were adopted. While these tools regulated height, density and use, the location of the infrastructure, in particular, water and sewer lines has always played a significant role in the current and future development patterns. The installation of an interceptor sewer line along the western edge of Town in the mid 1970's has been an important factor in the town's growth and change.

South Hadley experienced intense development pressure as a result of the real estate boom of the late 1980's and continued to grow through the 1990's into the 2000 decade. Records of building permits issued within the Town from 1982 to 2002 (see Table 3) are a good indicator of the rate at which development occurred and the numbers of units that resulted. An analysis of the dwelling units permitted reflect a rapid growth during the 1980's, especially in the multi-family sector, but a slower, more balanced mix of housing types during the last 10 years.

TABLE 3
TOWN OF SOUTH HADLEY
DWELLING UNITS PERMITTED 1982 THROUGH 2002

<u>YEAR</u>	<u>1 OR 2-FAMILY</u>	<u>MULTI-FAMILY</u>	<u>TOTAL UNITS</u>
1982	12	0	12
1983	24	20	44
1984	30	170	200
1985	36	90	126
1986	112	0	112
1987	51	82	133
1988	31	73	104
1989	59	52	111
1990	79	12	91
1991	25	40	65
1992	31	0	31
1993	54	0	54
1994	54	0	54
1995	39	0	39
1996	42	4	46
1997	46	4	50
1998	20	17	37
1999	23	18	41
2000	20	20	40
2001	17	17	34
2002	30	25	55

Sources: Town of South Hadley Building Commissioner; South Hadley Planning Board; 2004

Residential construction steadily and significantly grew during the 1980's with an average of over one-hundred (100) new units added annually between 1984 and 1989. Most of these new units during the 1980's were multi-family (apartment and condominium units). Some years reflect a strong single-family growth while others depict a stronger multi-family market. Many of the units constructed during the 1980's followed the corridor opened up by the interceptor sewer line in the 1970's, turning agricultural land into residential use.

While total annual residential construction peaked in 1984 at 200 units with the construction of the Riverboat Village Apartments, single-family construction peaked at 112 units in 1986 and dropped to 31 by 1988. Since the late 1980's, the annual residential construction has remained steady under 100 units with an average of around 45-50 units per year.

Plan approvals by the Planning Board also reflect changes in the character of the residential development as shifting more from single-family subdivisions to multi-family (predominately condominiums). From 1985 to 2006, thirty-seven (37) single-family subdivisions were approved and initiated. These subdivisions have created 417 new building lots – nearly all have been constructed upon. The largest subdivision during this time period was the Stonegate on the River with 80 lots. Slightly over half of the subdivisions created 10 or fewer lots. While subdivision activity of the 1940's to 1970's largely created relatively small lots (10,000 to 15,000 square feet), much of the subdivision activity of the last 2 decades has resulted in lots in the half-acre or larger range.

To encourage more open space in developments, in 2004, the Town repealed its "cluster housing" provision which had only been used once in 30 years and replaced it with a "Flexible Development" provision. This development option is currently being used for the 52-lot Mountainbrook subdivision which is preserving 50% of the land for common open space and the lots are in the 14,000 to 15,000 square foot range. Another 36-unit condominium development on Dry Brook Hill was also approved as a "Flexible Development" and is anticipated to break ground in 2008. Combined, these two "Flexible Developments", while providing 88 new dwellings, will also preserve over 40 acres of open space as part of the developments. If the properties were developed as "conventional" subdivisions, the only portions which would not have been developed would likely have been the wetlands.

While single-family subdivisions dominated the development activity of the 1980's and 1990's, thirteen (13) multi-family developments (predominately condominiums) were permitted. These developments account for 580 permitted dwelling units. Construction has been completed on most of the units, but is underway on 90 of the units and is anticipated to begin on another 36 units within the next year. Planning Board approval for six (6) of these multi-family developments accounting for 137 units was granted since 2004.

Although the entire Town felt the pressures of development in the late 1980's and early 1990's, some areas experienced greater impact than others. As a result of the installation of an interceptor sewer line, the Alvord Street area realized the addition of over 300 new dwelling units. Nearly all of these new units were constructed on land previously used for farming. In 1991, a research team from the UMASS projected that land in this area could accommodate an additional 308 single-family units along this corridor.

Development may never again meet the level of the late 1980's, however, changes will nonetheless continue to impact the Town's fiscal condition, environment, infrastructure and community character and such change must be planned for and directed. Often times, the increase in residential units will add a disproportionate share to the tax burden of a town because of the concomitant increase in school needs and other services. Now is the time to plan for retaining space for both passive and active recreation as well as the planned availability and expansion of industrial and commercial land.

South Hadley has not lost all of its agricultural land to development, yet it is steadily becoming a more densely populated "bedroom community", which will utilize what land remains to meet the growing demand. Realizing this, it is important for the Town to plan and equip itself for the protection and conservation of open land by identifying planning goals associated with existing and future development.

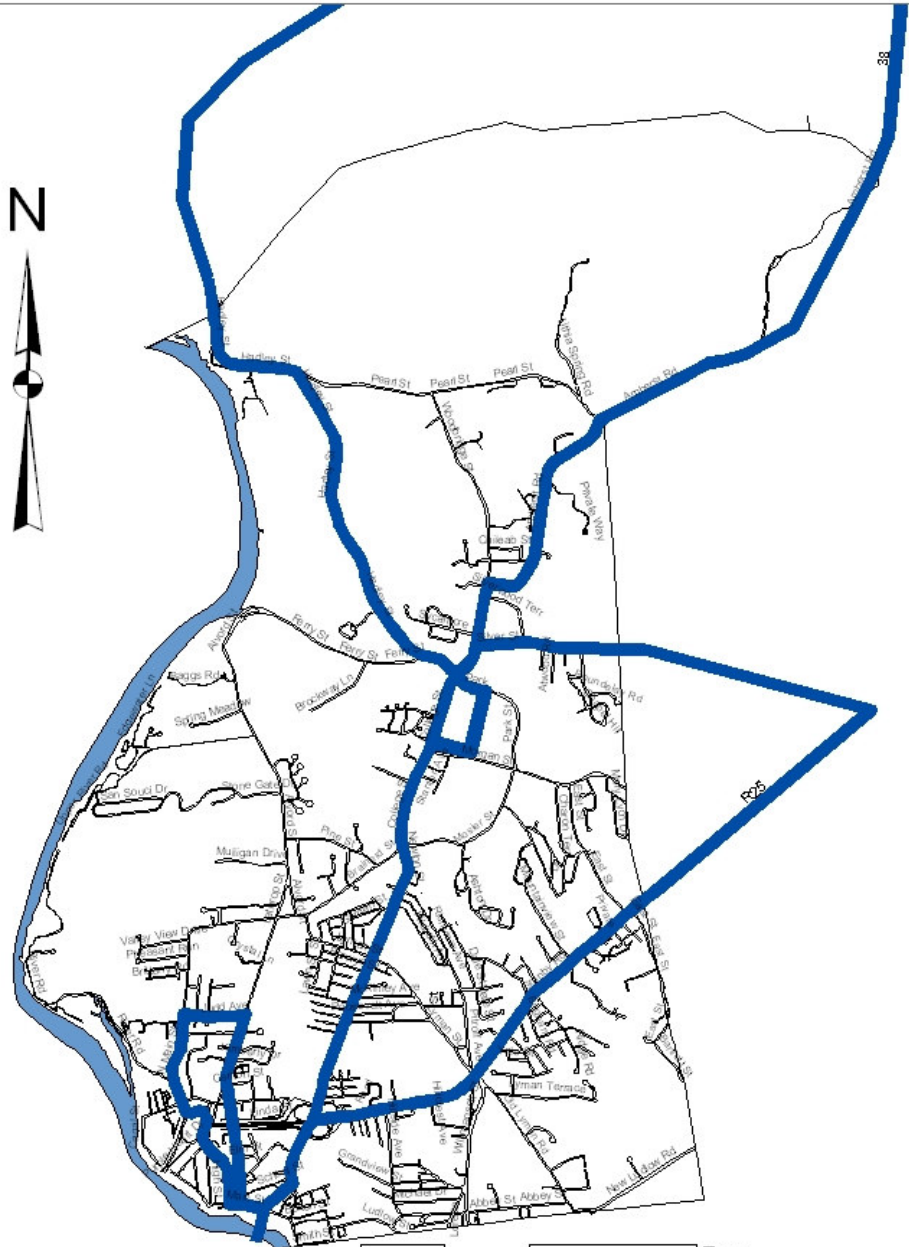
2. INFRASTRUCTURE

A. TRANSPORTATION

Although the Town of South Hadley does not have in-Town access to any of the major interstate highways, there is direct linkage to Interstate 91 via Mass. Route 202 west through Holyoke and to Interstate 90 (Mass Pike) via Route 33 south through Chicopee. Routes 116 and 47 north link the Town with commercial areas and employment and educational centers in Amherst and Northampton. Due to the absence of major interstates and railroad facilities in South Hadley, the potential for large scale industrial development appears to be limited to the industrial park in the southern portion of Town nearest to the major transportation routes. Locally, the transportation systems which are favorable for commercial, light industrial and expanded residential development exist throughout town. Completion of the rebuilding of the Route 116 County Bridge, linking South Hadley Falls with the City of Holyoke, in the mid-1990's has provide increased access between the industrial section of South Hadley, Holyoke, Chicopee and Springfield.

The Pioneer Valley Transit Authority (PVTA) has several regularly serviced routes linking the Town with the cities of Springfield, Holyoke and Chicopee as well as free bus service throughout the five (5) college area linking South Hadley with the towns of Amherst, Hadley and Northampton (see Map 3). The PVTA also provides support for van service in and around town for people with disabilities and senior citizens by providing the vans themselves and financial reimbursement of operation costs.

MAP 3 Pioneer Valley Transit Authority Routes - 2007



0 2,500 5,000 10,000 Feet

Source: South Hadley Planning Board, 2007

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B. WATER

South Hadley has two (2) water/fire districts which serve the Town's potable water needs (see Map 4). Fire District #1 supplies the southern portion of the Town from the Chicopee line northward to Stony Brook and the intersection of Mosier and Newton Streets, Parkview East and Parkview Drive, Cypress and Westbrook and across East Street into Granby. From here to the northernmost limits of the Town, residents are supplied by Fire District #2. The two systems are interconnected at five (5) locations for emergency situations only.

With the exception of about twenty (20) or thirty (30) homes near Riverboat Village which are serviced by private wells, Fire District #1 receives its supply from the Quabbin Reservoir.

Fire District #2 is supplied by the Dry Brook wells. There appears to be no shortage in this supply and it would seem capable of supporting additional residential development at the present time. However, it has not been determined how much development this source will ultimately supply. Due to the sensitive nature of this supply, the Town and Fire District have worked to develop a regulatory framework to protect the groundwater supply. A recently approved residential development will sit atop a portion of Dry Brook Hill in the well recharge zones but will take special precautions to ensure that the groundwater is not adversely impacted.

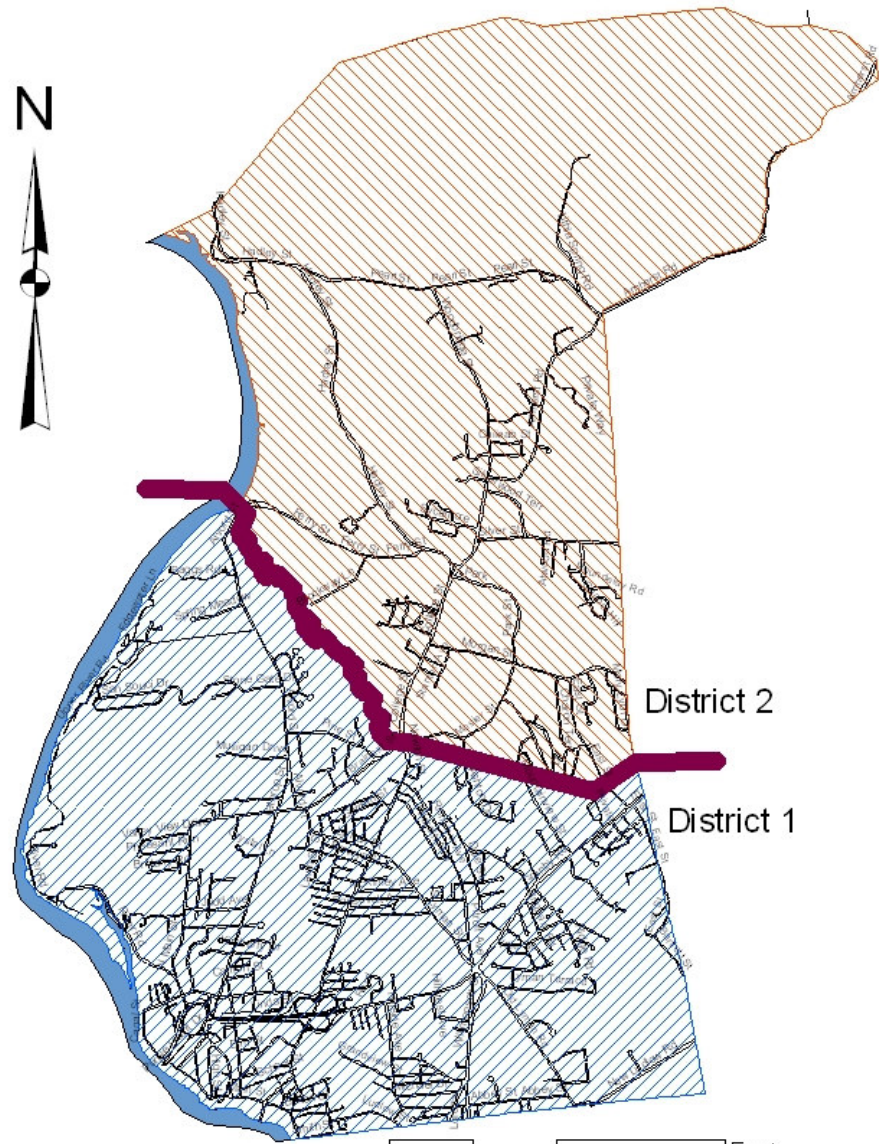
C. SEWER

The Town of South Hadley currently operates a wastewater treatment plant which serves a total of 7,300 households including 240 in neighboring Chicopee and approximately 300 homes in Granby. An average of 2.75 million gallons of raw sewage are treated daily.

The facility is currently operating at approximately 65% of capacity, and has the potential of treating 4.2 million gallons per day. Full capacity of the wastewater treatment facility is expected by the year 2020 if the planned expansion in a 5.1 million gallons per day capacity is not implemented. At least 85% of the total suspended particles are removed, and the resulting sludge is disposed of privately.

Installation of a 30-inch sewer trunk line parallel to the Connecticut River in 1976 resulted in the expanded residential development of the Alvord Street corridor in an area of prime farmland. A subsequent result of this new sewer interceptor was the development of five (5) larger subdivisions with over 175 approved lots, a 170-unit apartment complex, a 165-unit free standing condominium complex and a 200 unit retirement community, and approximately 50 other single-family homes.

MAP 4 South Hadley Fire Districts - 2007



Source: South Hadley Planning Board, 2007

A Planning Board study in the early 1990's reported that a maximum build-out of the Alvord Street corridor would produce an added 200,000 gallon per day increased flow to the existing sewer systems. 'This additional flow can be handled by the current collection and treatment facilities.

Although most of the town is serviced by the public sewer system, private septic handles all of the area north of Bachelor Brook (see Map 5). A primary reason for the lack of public sewer north of Bachelor Brook include the prohibitive cost of installing sewer infrastructure along the radically changing topography in the northern areas at the foot of the Mount Holyoke Range. Not wishing to repeat the development boom which followed the Alvord Street interceptor, the Town has taken the proactive position of discouraging sewer service in this area as a means of minimizing the likelihood of development disrupting the character of the area and views of the Mount Holyoke Range.

3. LONG-TERM DEVELOPMENT PATTERNS

As the street patterns demonstrate (see Maps 1 and 2), over the past 150 years, South Hadley has developed northerly. Overall, the southern portion of the town is developed much more densely due to a variety of factors including access, zoning, and utilities. Most recent developments (see Map 6) have focused on "in-fill" sites and modern, multi-family communities. As land has developed in the southern half, the first multi-family development was recently approved for the northern third of the town.

Zoning and utility infrastructure have largely dictated the Town's development pattern and will likely continue to do so. Most of the undeveloped land in South Hadley is zoned either Agricultural or Residence A-1 (*See Appendix G, Map 1 for the current Zoning Map*). Under the Zoning Bylaw, residential development in the Agricultural district generally follow the Residence A-1 requirements, but with larger lot and frontage requirements.

Residence A-1 dimensional requirements generally include:

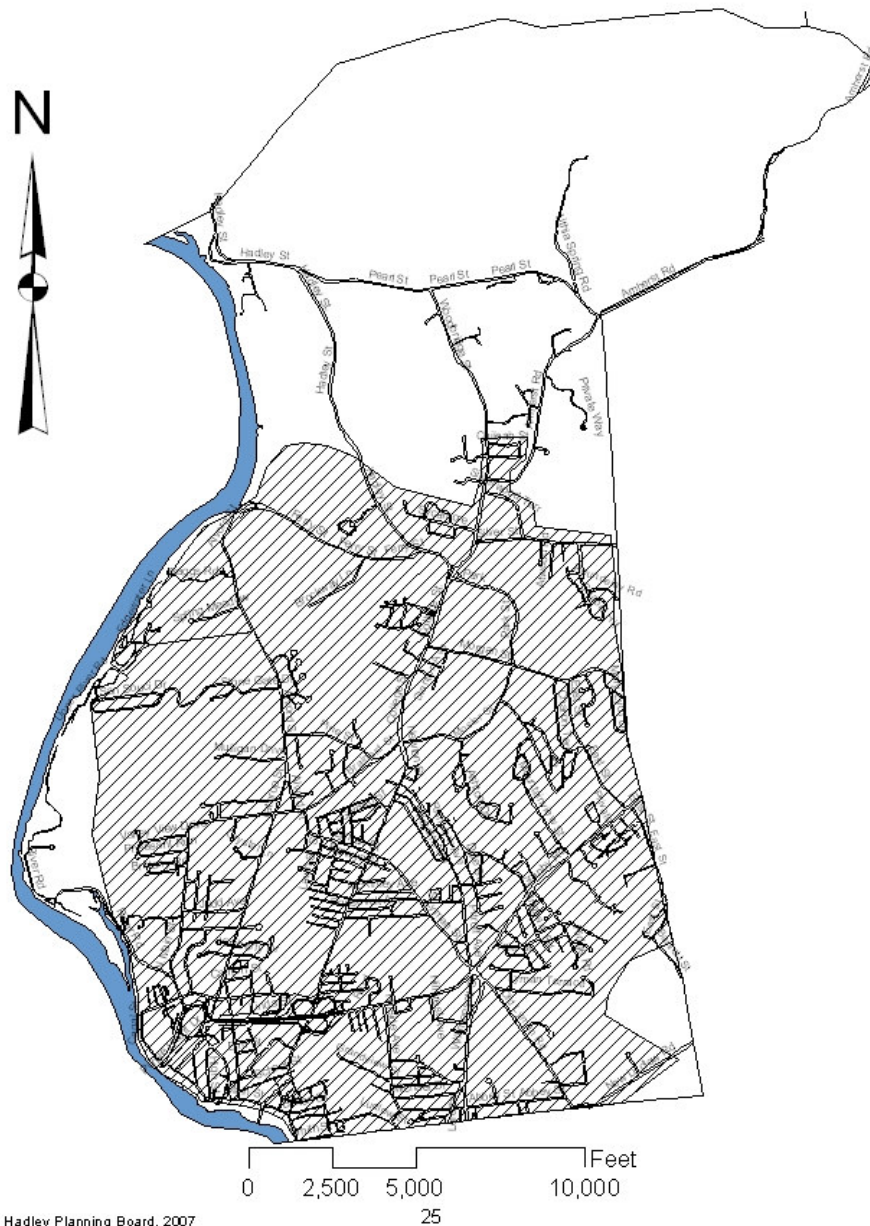
- a maximum lot coverage is limited to 30%,
- lot size is limited to a minimum of one half acre lots, and
- for specially permitted properties (i.e., churches, schools), building lots are required to be a minimum of two (2) acres.

Agricultural dimensional requirements generally include:

- thirty thousand (30,000) square feet is the minimum lot size,(forty thousand (40,000) square feet in the Aquifer Protection Overlay District), and
- again, a maximum lot coverage of 30%.

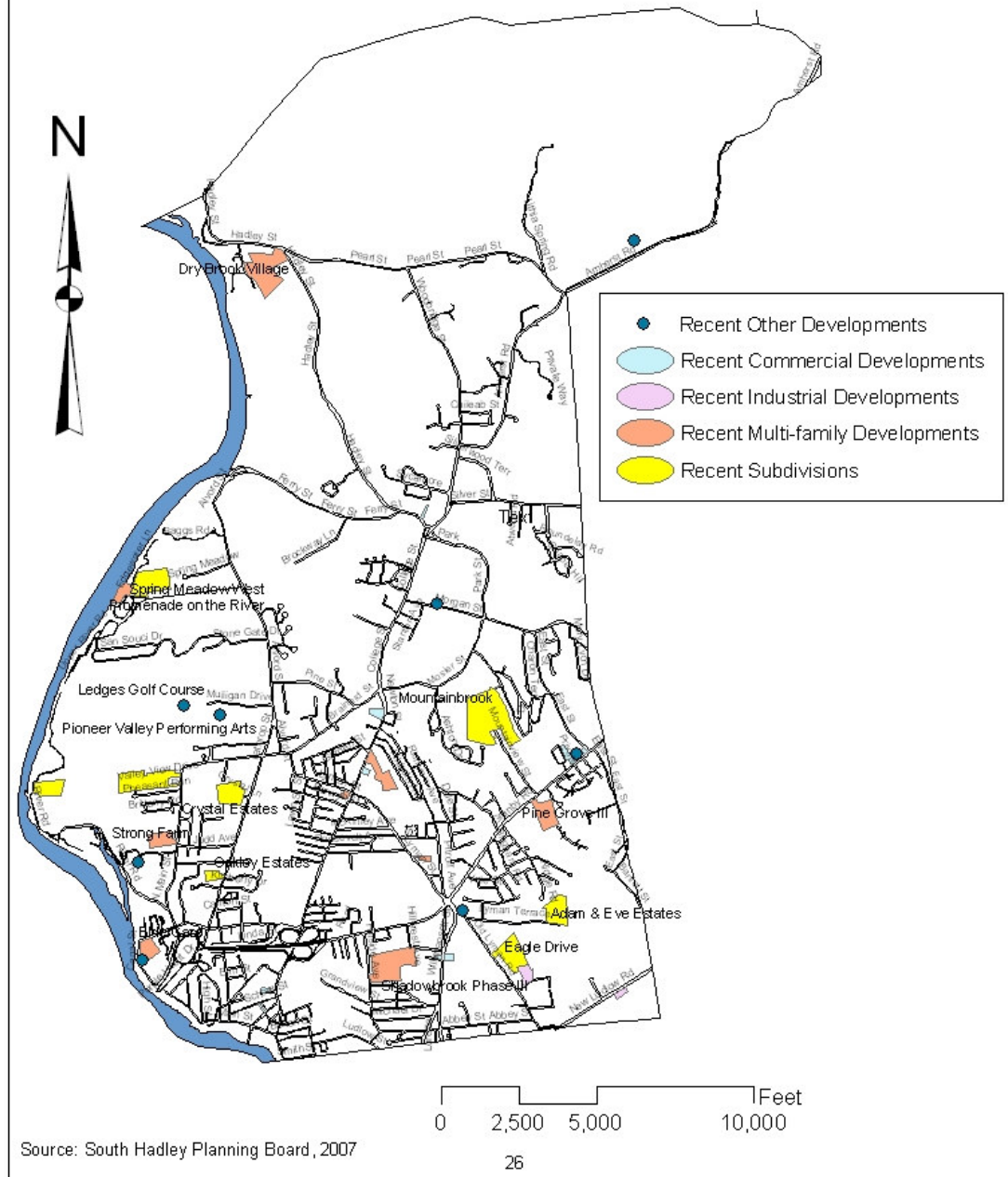
MAP 5

Generalized Area of Sanitary Sewer Service - 2007



Source: South Hadley Planning Board, 2007

MAP 6 Recent Developments 1998 - 2007



To illustrate the application of the Zoning Bylaw, the Alvord Street corridor, with the exception of the “Industrial Garden”, is primarily zoned Residential A-1 and Agricultural. Under this zoning, the landscape along Alvord Street has been drastically altered from its previous farm dominated landscape to its present pattern of predominately residential uses with open farm landscape interspersed. Four very large subdivisions were completed in the 1990’s on 176 acres on the Town’s open space acreage. Concern persists that the remaining large, active farm will become a massive subdivision in the foreseeable future.

This concern over the loss of agricultural land resulted in the Alvord Street Corridor Study which showed, among other things, that 285 acres along the Alvord Street corridor had been in an unprotected open space status and should result in further proposals for protective measures as amendments in the Zoning By-Law or by other means. To this end, the Town, in 1997 by an arrangement with James River Corporation, purchased some 244 acres of this land with the assistance of the State’s Urban Self-Help funds for the purpose of developing a regional multi-purpose recreational site including an eighteen (18) hole golf course.

In 2003-2004, the Pioneer Valley conducted a “Build-Out Analysis” based on South Hadley’s current Zoning Bylaw and an assessment of the constraints on land for development. The study concluded that there were 4,374 acres of land which could be developed without any known constraints. Further, the available land, under current, “by-right” zoning, could result in an additional 4,537 households, 12,839 residents, and 1,724 students. This would represent a 75% increase in the Town’s population, a dramatic decrease in the community’s open space – under current zoning regulations. The implications for community services and recreation needs are significant as such growth could result in the community which is characterized by the “Range” and the “River” becoming characterized by the “condo” and the “mansion” with little open space in between and views and access to the “Range” and the “River” becoming illusory and a fleeting memory.

SECTION 4 - ENVIRONMENTAL INVENTORY AND ANALYSIS

4.1 GEOLOGY & SOILS

The geological history of South Hadley is both dramatic and significant. Continental drift, the formation of the Appalachian Mountain chain, volcanoes and glacial scouring, have all played a role in the physical development of the Connecticut River Valley. These factors have influenced the topography and soils which, in turn, have determined surface and ground-water characteristics, forest cover and finally land use.

During the Triassic Period (220 to 180 million years ago), two faults formed on either side of what is now the Connecticut Valley. The forces of continental drift pulled these faults apart causing the land between to drop and form the Triassic basin (the Connecticut Valley). The subsequent geological activity formed the topography, rocks and soils of the Valley have given present day South Hadley its landscape characteristics. Figure 2 shows a cross section of the sedimentary and igneous rocks in the Range and Valley and is to be used as a reference for the following discussion.

Sugarloaf Arkose

Sugarloaf arkose was the first deposit in the Triassic basin. It arrived from streams in the east which first deposited larger rocks in the eastern portion of the Valley and then dropped smaller rocks gradually westward as the streams slowed. It is a buff to pale red arkose (a sandstone with a high percentage of feldspar fragments) that gets its color from both iron found throughout the cement of this sediment and the pinkish to orange grains of orthoclase feldspar.

Hitchcock Volcanics

The Triassic era was unusually active with volcanism. Lava from volcanic fissures and low vents is manifested in different forms such as the Hitchcock Volcanics. These are stacked, volcanic cones that shot up through the early, uncemented arkoses. The arkose mixed with the bases of the cones which formed sections of diabase and basalt (a dark igneous rock).

Holyoke Basalt

This rock is one of the most prevalent in the Mount Holyoke Range today and has been quarried for use in road beds. It is also called diabase or traprock. It is reddish brown with feldspar crystals when it is weathered and light to dark gray when freshly exposed. Most Holyoke basalt was formed from a lava flow that extended southward through the basin while smaller amounts spread east and west against alluvial fans. The thickness of the flows range from 100 to 700 feet. A phenomenon known as columnar jointing occurred when the basalt cooled from its parent lava. These are hexangular joints or cracks that occur perpendicular to the cooling surface. Titan's

Figure 2

Cross Section of Sedimentary and Igneous Rocks

(Available for Review in the Planning Board Office)

Piazza in South Hadley is probably the best example of columnar jointing in the Range.

Second Sugarloaf Arkose

This arkose is much like the first but was formed after Holyoke basalt came into existence. The sediments in the second are coarser as well. This is due to the fact that westward flowing streams at this later date were running at great volume and were able to carry heavier material. Second Sugarloaf arkose outcrops are found only on the south side of the Range.

Granby Tuff

Granby tuff is made up of volcanic ash and fragments, crumbles easily and is darkly colored. Like the Second Sugarloaf arkose, it occurs on the south side of the Range. Purer layers resulted from violent, volcanic eruptions while mixed fragments indicate formation from quieter lava flows. The tuff can be up to 1000 feet thick.

Intrusions

Sills, dikes and pipes of fine-grained basalt bisect the Granby tuff and nearby sedimentary material. These intrusions are between 15 and 200 feet in diameter and rise 10 to 30 feet above the tuff surface. South Hadley's Black Rock Dike is the largest intrusion in the Range.

Longmeadow Sandstone (or the Portland Formation)

Many of the brownstones in New York City are constructed from this valuable sandstone. It is a brownstone containing quartz and iron oxide cement. Layers were deposited before and after the Granby tuff and may be 2,000 feet thick at one point. This unit is also known as the Longmeadow Shale, for it is shaley in places.

Chicopee Shale

This rock is found just south of the Mount Holyoke Range and was formed toward the end of the Triassic Period. It is finer grained than the sandstones below. The Triassic Period laid the geological foundation for what was to develop millions of years later. The Pleistocene Era, or what is commonly referred to as the ice age, arrived approximately 1 million years ago and lasted until roughly 7,000 years ago. Glacial advance and retreat during this period had a significant effect on the Valley and Range. The glaciers came in thicknesses of up to 10,000 feet scouring and carrying Triassic bedrock, clay and sand.

Till deposits (the unsorted "mix" of clay, silt, sand and boulders deposited by glacial ice) can be found on both sides of the Mount Holyoke Range today. A dam of till was formed on the Connecticut River just north of Middletown, Connecticut at Rocky Hill during one glacial retreat. This formed a series of lakes known collectively as Lake

Hitchcock that extended 160 miles north to Lyme, New Hampshire. Except for seasonal flooding, Lake Hitchcock provided the most recent important sediments in the Valley. Deltaic and Lacustrine fine sands and silts were deposits on the interior Valley floor. These deposits have contributed to the rich, alluvial soils that predominate the “tabletop” farmlands of the region.

In terms of development constraint, soils can be considered to be the most critical element of the physical environment, the understanding of which can help the community to decide, for any given location, which land uses are realistic and which are not. Therefore, careful attention to the various properties and geographic concentrations of soils can prove to be an advantage in planning for a community’s open space and recreation needs.

The U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS) makes soils information available in the form of soil surveys, of which Soil Survey of Hampshire County, Massachusetts, Central Part provides the reference material for South Hadley. Although the NRCS maps many different soil classifications for the town land base, it is helpful for our purposes to distinguish between the various so-called “soil associations”. These are groups of soils named for the dominant soil type, and characterized primarily by common geographic patterns, parent material, and limitations for particular uses (*see Appendix G, Map 2 for the Special Landscape Features and Soil Zones Map, and see Figure 3, “Estimated Limitations of Soils for Specific Uses”*).

References to limitations contained in the following section provide a general guide only. Due to the wide variation of potential recreation development, reference to the NRCS Soil Survey should always precede the design of any specific recreational or open space project. The NRCS recognizes four soil groups or associations for the Town of South Hadley, as follows:

Roughly 38% of the Town is underlain by the **Hinkley-Merrimac-Windsor** association concentrated primarily in the eastern and southern sections of Town, and including the village of South Hadley Falls. The Hinkley and Windsor components are described as excessively drained, draughty soils, upon which plant growth is limited by the lack of available moisture. Despite the poor filtering capabilities of these soil for on-site septic systems, all of this association is currently in residential or commercial use supported by an existing public sewer system. Few limitations exist for forest management operations in this soil group, with the exception of those associated with tree growth itself. Conditions in this association are described as excellent for most recreational development.

The moderately well to poorly drained **Amostown-Scitico-Boxford** group represents roughly 34% of the soils of South Hadley. These soils are concentrated in the lowlands which spread eastward from the Connecticut River, and are predominantly loamy and clayey soils formed in postglacial outwash, that is, sorted material

Figure 3

Estimated Limitations of Soils for Specific Uses
(Available for Review in the Planning Board Office)

deposited by glacial melt water, or “lacustrine sediments”. Though most of the association is in agricultural or forest use, it is described by the NRCS as limited for building and on-site septic due to wetness and slow permeability typical of the Scitico component. In general, there are limitations for recreational development in this association, especially with regards to actual construction, due to soil saturation conditions. To be successful, the scheduling of forest management operations may need to be limited to times of frozen ground conditions to be successful.

The **Rock Outcrop-Narragansett-Holyoke** association covers approximately 22% of the town land base located primarily at the northern (essentially the south-facing slopes of the Mount Holyoke Range) and southwestern sections of the town. This grouping is characterized by high, massive ridges, and shallow to bedrock conditions typical of the Holyoke soils component. This group is also a result of glacial ice deposition. All of this association is currently in forest use, with severe limitations for residential development, as described by the NRCS. The soil survey rates this association moderate to severe in limitation for forest management purposes, primarily due to steep slope conditions. Mitigating measures to protect these soils against erosion are necessary for successful forest management. Recreational development will be limited to trail system and associated construction, with particular attention to erosion potential.

Approximately 4% of the Town falls into the **Gloucester-Montauk-Paxton** association, soils which are deep, well and somewhat excessively drained, sandy and loamy, and formed in glacial tills. This grouping is confined to uplands along the eastern boundary which South Hadley shares with Granby. Most of this association is currently in forest use, and is described as having severe limitation for building and on-site septic due to the existence of surface stones. Limitations are slight to moderate for forest management in this association. A preponderance of small to large surface stones could be the primary drawback to development of recreational facilities.

Finally, 2% of the South Hadley’s land base is underlain by the **Hadley-Winooski-Limerick** association which is characterized by deep loamy soils formed in alluvial material, typical of the floodplains within the Connecticut Valley. This association consists of well drained Hadley soils, moderately to well drained Winooski soils, and the more poorly drained Limerick soils, located in depressions throughout the northeastern section of town. Limerick soils are those which exhibit high water table conditions. This association is generally suited to tree and crop growth. This group is limited, however, for building purposes due to its propensity for flooding and wetness.

4.2 WATER RESOURCES

The Town of South Hadley lies within the 11,250 square mile Connecticut River Basin and enjoys the distinction of marking the dramatic transition between the primarily agricultural and predominantly industrial segments of the Massachusetts portion of the river (*see Appendix G, Map 3 for the Water Resources Map*).

A significant portion of South Hadley's major streams in South Hadley are located in the northern half of the community. Bachelor Brook and Stony Brook are two major waterways which flow westward from neighboring Granby to the Connecticut River. Elmer and Dry Brooks run south and westward from the slopes of the Mount Holyoke Range to the River. Finally, White and Buttery Brooks feed into the Connecticut River from wetlands in the south section of Town.

There are four major open water bodies in the community. At the base of the Mount Holyoke Range lies the Lithia Springs Reservoir (formerly a source of drinking water for Fire District #2) which is now part of the Mount Holyoke Range State Park. Within the Mount Holyoke College campus are the Upper and Lower Ponds parts of the Stony Brook waterway. Leaping Well Reservoir, formerly a source of drinking water for Fire District #1, is along the south side of Granby Road in the southern portion of the community. Smaller ponds include Black Stevens Pond, Titus Pond, Hillcrest Pond, and a few unnamed ponds in the Bynan Conservation Area.

The Buttery Brook corridor includes 9.8 acres of publicly owned greenbelt within the total 29.2 acres of Buttery Brook Park. A canoe launch or dock is available for public use at Bicentennial Canal Falls Park on the Connecticut River. Other private recreational facilities including Brunelle's Marina and the Red Cliff Canoe Club, also utilize these streams and the Connecticut River.

The inhabitants of the Town of South Hadley derive their potable water supply from both surface and ground water sources, administered by two separate political bodies, Fire Districts #1 and #2. District #1 serves approximately 70% of the Town's population, as well as sections of both Granby and Ludlow under a contract to purchase DCR Quabbin Reservoir water. Within this district, two water sources, Leaping Well and Buttery Brook Reservoirs, were abandoned circa 1950 due to poor water quality, in favor of the currently operated hookup to Quabbin via the Chicopee Valley Aqueduct system which went on line in 1952.

The water supplied from District #2 is pumped from the 108-foot deep Dry Brook wells located near Dry Brook Hill. This well is situated in saturated sand and gravel deposits sandwiched between the approximately 80 feet of confining clay layer above, and impervious bedrock below.

1. FLOOD HAZARD AREAS

Historically, the Connecticut River has flooded both from excessive rainfall and from rain in combination with snowmelt runoff. The greatest flood of record in South Hadley occurred in March, 1936, as a result of heavy spring rains accompanied by melting snow. The second greatest recorded flood, in September, 1938, resulted from intense rains associated with a hurricane (Federal Insurance Administration's Flood Insurance Study, 1979). Tributaries of the Connecticut River, particularly Stony Brook and Bachelor Brook, are also subject to considerable flooding. The level that flooding will reach on the average of every

100 years (the 100-year flood, which has a 1% change of occurring any given year) is shown as the 1% flood zone (also called the 100-year flood plain). The Flood Insurance Rate Maps prepared in conjunction with the National Flood Insurance Program delineate zones A and V (areas of 100-year flood).

These maps for South Hadley are available at the office of the South Hadley Planning Board and are identified as Community Panel Number 250170 0005 A and 250170 0010 A: Effective Date August 15, 1979 from U.S. Department of Housing and Urban Development, Federal Insurance Administration.

2. WETLANDS

Wetlands play an important role in any community. Their functional values include flood control, aquifer recharge and discharge, pollution control, fish and wildlife habitat, increased biodiversity, recreational use and aesthetic appreciation. The Water Resources Map (*see Appendix G, Map 3*) shows the areas of forested and non-forested wetlands in South Hadley. The floodplain forest along the Connecticut River and the mouths of Bachelor and Stony Brooks are of great value to the town. (See a complete discussion of floodplain forest in Section 4.3, Vegetation.) The southeast corner of town also has extensive and unusual pine barren habitat that has recreational potential for trail users and bird watchers. White Brook, east of River Road, is another area of special consideration. This location includes many acres of relatively undisturbed wetlands, but is under pressure for future development potential. The Town may want to determine this area's importance as an undisturbed wetland. Most of the Natural Heritage and Endangered Species Program's rare habitat areas are in the wetland areas and the Mount Holyoke Range.

Town Meeting recognized the importance of wetlands in 2005 by adopting the Town's first Wetland's Bylaw. This regulation established a 50-foot no disturb buffer zone adjoining all wetlands and larger vernal pools. Through adoption of this Bylaw, the Town has taken a major step towards utilization of its regulatory tools to protect the functions of some of the natural open space.

3. AQUIFER RECHARGE AREA

The Mount Holyoke Range constitutes the watershed for the former Lithia Springs Reservoir and recharges the underground aquifer in the northern section of South Hadley. This aquifer supplies water for District #2's Dry Brook Hill wells. A Water Supply Protection District (Section 7N of the South Hadley Zoning By-Law) was established in 1992 to protect and preserve the quality and quantity of surface and ground water in this area of Town (*see Appendix G, Map 4 for the Water Supply Protection Overlay District Map*).

4.3 VEGETATION

1. GENERAL INVENTORY

South Hadley has a diverse vegetative cover reflecting its mixture of lowland and mountain settings. Forests dominate the vegetative communities. But, the forests are themselves diverse and have played a significant role in the community's development.

In general, the forest cover in South Hadley is typical of that found in central New England and the Connecticut River Valley. The warmer, south slopes of the Mount Holyoke Range grow a forest with a predominantly oak-hickory composition including northern red oak and shagbark hickory, in direct contrast to the hemlock-white pine-northern hardwood mix found on the cool, moist northern slopes of the range.

In addition to the above, typical species throughout South Hadley include eastern hemlock, yellow birch, paper birch, as well as white pine, red maple, sugar maple, American beech, white ash, balsam fir, red spruce and white spruce, red spruce and white spruce. Associated understory vegetation and ground cover include such plants as common witch-hazel, viburnums, mountain laurel, pink lady's slipper, trilliums, tree club moss, Canada mayflower, and wintergreen.

During the Industrial Revolution of the 19th century, wood from the Range fed the kilns which baked the bricks for mill construction in Holyoke and South Hadley. The eventual use of oil and coal for fuel served to ease the pressure on the Range forests, allowing them to regenerate. Today, the forest and adjacent agricultural land provide the Town with a pleasant landscape and visual link to its past, a good supply of timber, wildlife habitat, as well as climate moderation and erosion control in the Range and watershed protection in the lower, wet areas.

The Massachusetts Natural Heritage and Endangered Species Program (MNHESP) has mapped identified 959 acres of lands classified as priority habits for 49 threatened and endangered species in South Hadley. Of the 49 species listed, 18 are animals (fish, amphibians, reptiles, birds, mussels, dragonfly/damselfly, and butterfly/moth) and the remaining 31 species are vascular plants.

The Connecticut River riparian zone contains a unique forest type especially adapted to the seasonal flow of water over the river's banks; the so-called northern floodplain forest. This special forest composition exists in successive waves of vegetation out from the river and into the floodplain. The first flank is comprised primarily of the willows and green ash which survive the immediate riverside environment to stabilize the river's banks. Farther out on the low ridges of heavy course sediment created by river flooding grows the eastern cottonwood, which pushes taproots deep into the alluvial soil. A relatively undeveloped shrub or intermediate layer of vegetation can be seen beneath the sheltering canopy of the

cottonwood, due in large part to both the shade of the over story and the scrubbing effect of river flooding. Seedlings of silver maple, elms, box elder, and white ash can be found here, as well as ostrich fern, and sedges, and grasses, depending on the light levels in a given area of the forest floor. Grapevines and american black currant are among the prolific under story plants in this section of the floodplain. Still farther back from the river, trees such as sycamore, sour gum, tulip-poplar, red maple and American beech comprise the over story. These species grow close enough to the river to be rooted in moist floodplain soils, yet far enough away from serious flooding.

According to the Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (MNHESP), the lower portions of Bachelor Brook and Stony Brook are excellent examples of “Small River Floodplain Forest”, a natural community targeted as a priority for protection in the state. These floodplain forests provide habitat for several state-listed rare plant species, as well as for state-listed mussels. MNHESP advises that the greatest threat to these communities and their rare plant populations is the invasion and spread of non-native plant species.

MNHESP has indicated that the Bachelor Brook/Stony Brook area harbor two of the best examples of the state’s small river floodplain forest (only 10 exist statewide). The general area of the Bachelor Brook/Stony Brook floodplain forests are known to be habitat for thirteen documented rare species – an exceptional concentration of rare species. Most of the species in this area are sensitive to the likely deleterious effects of development. Due to the very unique qualities of these lower portions of Bachelor Brook and Stony Brook, the MNHESP strongly supported and endorsed the Town’s successful application for Self-Help funds to assist in acquisition and permanent protection of a 288-acre tract in 2004. This acquisition ensured that these unique areas are protected from development and clearing of the nearby upland forest, and cutting and grazing within the floodplain forest itself.

2. FOREST LAND

Forest is a major part of the open space picture in Massachusetts. The 1988 USDA Forest Service publication, Forest Statistics for Massachusetts – 1972 and 1985 reports that, while cropland and pasture comprise 5.3% of the state land base, Massachusetts forest covers over 2.9 million acres and represents over 64% of the total land area. If Massachusetts Audubon Society projections of open space consumption (over 2 million acres by 2030 based on current rates) prove correct, the lion’s share of conversion will likely occur in our state’s forest environment. In addition, the Massachusetts forest is undergoing fragmentation into an ever increasing number of even smaller private ownerships causing a nightmare for the planning, protection and management of our forest recreation, watershed, aesthetic, products and wildlife functions.

In many cases, the fragmentation of forest ownership into many smaller parcels marks a prerequisite to conversion. This will result in the fragmentation of larger forest tracts into even smaller parcels, causing the disruption of the necessary functions performed by our forestland.

South Hadley's forest land reflects this conversion pattern. Fifteen (15) years ago, forest lands covered approximately 6,965 acres or 59% of the total town land base. Data from the MassGIS (2003) indicates that forest lands now account for only 5,639 acres or 48% of the land area. The June, 1991 Mass. Agricultural Experiment Station Research Bulletin #735 Forest Productivity Mapping of Massachusetts, indicated that 55.7% of the forest lands were considered of prime productivity for growing eastern white pine and red oak.

The many functions of forest use are well documented (Report of the State Forestry Committee on Minimum Forest Cutting Practices Regulations). The State's primary forest activity, recreation, is critical for a state ranked 4th in the nation in population density.

The watershed function of the forest involves the sheltering of South Hadley water supplies by regulating the amount of water, its flow and quality. Watershed protection is an important characteristic of forest cover in South Hadley.

Streamside stands remove excess nutrients and sediment from surface runoff and shallow groundwater. They also shade the Town's streams and the Connecticut River to optimize light and temperature conditions for aquatic plants and animals. Streamside forest buffers against some pesticides and provides organic food to maintain the biological integrity and diversity in the adjacent stream. Figure 4, "Streamside Forest Buffer", describes these characteristics as well as management considerations for water resource protection.

The South Hadley forest serves an important wildlife habitat function as home to a large and diverse population of mammals, birds, reptiles, amphibians and fish, particularly within the Mount Holyoke Range ecosystem, as well as the floodplain forest along the Connecticut River and tributaries and the remaining open space.

Figure 4

Streamside Forest Buffer

(Available for Review in the Planning Board Office)

The scenic quality of forestland defines the “rural character” of a Mount Holyoke Range community like South Hadley. Forest production, according to sound management principles, is critical to local economies and open space retention. In many cases, keeping the land productive is the key to keeping the land “open”.

Forest cover affects air quality in many ways. The forest filters particulates from the air, shades and cools forest interiors through evapotranspiration, and reduces wind and consequent drying. It is also becoming widely recognized that forests may play an important role in the helping to mitigate the effects of global warming. Every forest parcel is part of a regional and global “system” which both affects and is affected by temperature and air quality on a much larger scale.

The above describes the various forest functions which are, in fact, integral parts of each other; functions which are often misinterpreted as forest uses, such as wildlife use, recreation use, etc. In fact, the functions are interrelated and cannot be separated out from the whole. The “use” itself is forest.

Chapter 61 of the Massachusetts General Laws, the Massachusetts Forest Tax Law represents the best state-level effort to maintain forestland productivity through local use assessment and sustained-yield management planning. This program offers forest landowners the option of reduced taxation, emphasizing the long-term nature of forest growth rather than short-term building lot value, in exchange for carrying out activities outlined in a forest management plan.

All parties to the Chapter 61 program financially benefit through its participation:

- The property owner receives a direct benefit through reduction in taxes
- Communities, such as South Hadley, are entitled to bill for and receive an 8% tax on all products removed from these “classified” lands.

Of most significance from the perspective of long-term open space protection, Chapter 61 gives the community a 120-day first refusal option to purchase the land upon notification that a particular forestland parcel will be converted to another use. This aspect of the program is obviously important as part of South Hadley’s overall open space planning strategy.

The Forest Tax Law program is usually a reliable measure of a community’s efforts at retention of land in forest use. Based on the most current data, however, the total amount of forestland managed under the authority of this planned program in all of South Hadley is negligible: currently 30 acres or 0.6% of total Town forestland (South Hadley Assessor’s Office, 2007). Opportunities exist to encourage more South Hadley landowners to participate, especially within the slopes of the Mount Holyoke Range.

4.4 FISHERIES AND WILDLIFE

Typical wildlife found in South Hadley includes such species as the eastern cottontail, beaver, northern flying squirrel, gray squirrel, Virginia opossum, wood thrush, morning dove, and downy woodpecker, to name only a few.

The larger areas of contiguous forest land in the northern portion of town are also home to white-tailed deer, bobcat, red fox, wild turkey, ruffed grouse, pileated woodpecker, barred owl, coyote, great horned owl, and red-tailed hawk.

Wetlands and the northern floodplain (found in such areas of town as the mouths of Bachelor and Stony Brooks and along the Connecticut River) are important habitat for a great variety of wildlife species. The bald eagle is on the top of this list. This legally protected bird relies on the relatively undisturbed waters of the Connecticut River for forage and nearby tall trees for nesting. Although there are no known nesting pairs in South Hadley at this time, potential areas for such activity presently exist within town boundaries.

Other floodplain and wetland wildlife includes the wood duck, great blue heron, red-winged blackbird, silver-haired bat, mink, spotted turtle, red-spotted newt, wood frog and spring peeper.

Bachelor Brook, Elmer Brook, Stony Brook and particularly the Connecticut River are important fisheries resources for the town. The Massachusetts Division of Fisheries and Wildlife has identified 37 fish species in the Massachusetts portion of the lower Connecticut River. Common species include large mouth bass, pickerel, bullhead catfish, carp, white suckers, bluegill, and yellow perch. American shad arrive in great numbers in the spring and the federally-designated endangered shortnose sturgeon has a significant breeding population in these waters. The reintroduced Atlantic salmon (Salmo salar) also make their way from the Atlantic and up the Connecticut River every spring.

The Massachusetts Natural Heritage Program has identified several areas that bear special consideration in the design of development projects in South Hadley. The entire 6.6 miles of Connecticut River riparian zone is considered protected wetlands wildlife habitat. In addition, both the area along Lithia Springs Road between Lithia Springs Reservoir and Elmer Brook, and along the Moody Corner section of town, south of Pearl Street along Bachelor Brook, are habitats for rare wetlands vertebrates. Under provisions of the Massachusetts Wetlands Protection Act, any proposed activity within these areas is to be reviewed by the Natural Heritage and Endangered Species Program for potential impact and possible modification of the project.

The Town of South Hadley should pay considerable attention to proposed development along the Connecticut River. The two protected species mentioned, the

Bald Eagle and Shortnose Sturgeon, depend on waterways that are relatively uncontaminated from non-point and point source pollution and on a somewhat contiguous buffer along the river's banks. The river also acts as an important nesting and feeding area for migrating waterfowl in the Atlantic flyway. The Town should also be careful to maintain the contiguity of its forest land in the northern part of the town. Further development could result in fragmentation and elimination of habitat for a number of species.

The Town was notified on July 30, 1998 that the Connecticut River, seven (7) miles of which forms the western boundary of South Hadley, along with thirteen (13) other rivers in the country gained national recognition as an American Heritage River. The town now shares a particular status along with other communities along the river enabling them to work in partnership to carry out 29 conservation and development projects that were proposed during the nomination process, and made specific in the nomination's Action Plan. As the process now evolves, the nomination will take on greater importance in terms of the Open Space and Recreation Plan.

4.5 SCENIC RESOURCES AND UNIQUE ENVIRONMENTS

South Hadley is rich in scenic, cultural, and unique resources and environments. Many of these resources derive from the community's unique setting along the Connecticut River and the Mount Holyoke Range.

1. SCENIC LANDSCAPES

According to the 1981 Massachusetts Landscape Inventory, prepared by the Massachusetts Department of Environmental Affairs, most of the southern slope of the Mount Holyoke Range within the Town of South Hadley is considered Class A "Distinctive" by virtue of the visual quality of this landscape. The land along the Connecticut River is described as Class B "Noteworthy". Supporting this high visual quality ranking and the threatened condition of the Mount Holyoke Range, in 2000, the Mount Holyoke Range was designated by Scenic America as one of 10 "Last Chance Landscapes". The scenic value of the Mount Holyoke Range arises from both an external view as one looks toward the range from the lowland areas and from looking down to the lowland areas from atop the range (*see Appendix G, Map 2 for Special Landscape Features*).

2. MAJOR CHARACTERISTICS OR UNUSUAL GEOLOGIC FEATURES

Titan's Piazza and the Black Rock area (see Section 4.1 Geology)

3. CULTURAL AND HISTORIC AREAS

The Town of South Hadley has two significant Historic Districts which contribute to the Town's character. On March 1, 1992, the National Park Service placed the South Hadley Canal District, including one piece of property located at 315 River

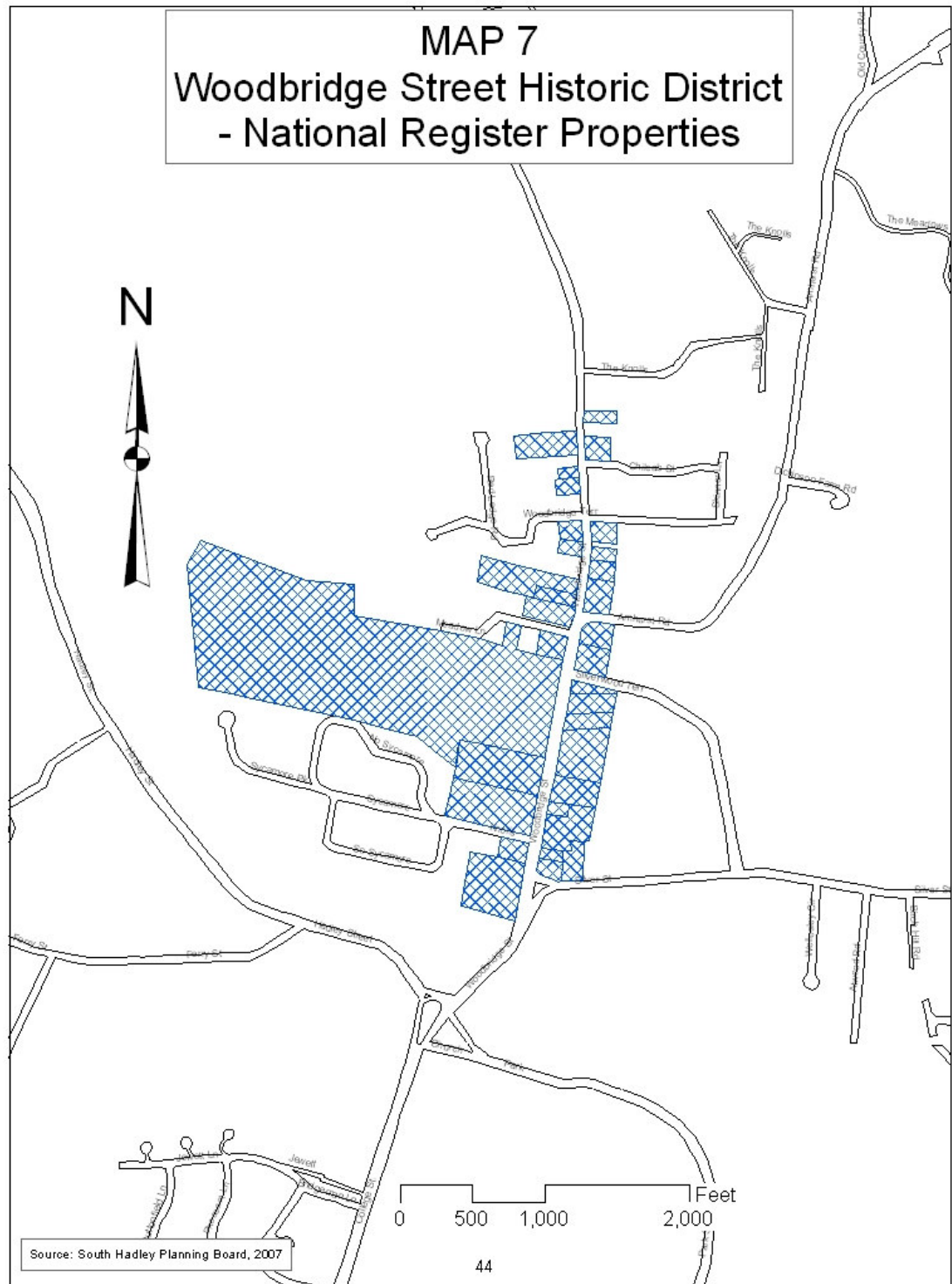
Road on the National Register of Historic Places commemorating the rich history of this engineering and cultural wonder (included in Section 3.2 HISTORICAL OVERVIEW).

Also significant to the Town's historical and cultural resources is the Woodbridge Street Historic District which was established and added to the list of properties of the Massachusetts Historical Commission on November 14, 1983, and includes properties at the following locations:

7 Silver Street	-	Rev. John Lovell, Willard House
25 Woodbridge Street	-	Daniel House
28 Woodbridge Street	-	The Sycamores
29-31 Woodbridge Street	-	Lyman House
32 Woodbridge Street	-	Graves House
33 Woodbridge Street	-	Skinner Museum
35 Woodbridge Street	-	White, Joseph III
36 Woodbridge Street	-	Skinner-Harris House
40 Woodbridge Street	-	White, Dea J. House
41 Woodbridge Street	-	
43 Woodbridge Street	-	Clark Isreal House
48 Woodbridge Street	-	Skinner
49 Woodbridge Street	-	Chapin House
51 Woodbridge Street	-	Tinkhas House
53 Woodbridge Street	-	
61 Woodbridge Street	-	
63 Woodbridge Street	-	Montague House
64 Woodbridge Street	-	White Cyrus House
68 Woodbridge Street	-	
69 Woodbridge Street	-	
70 Woodbridge Street	-	
71 Woodbridge Street	-	Seith-Steven House
77 Woodbridge Street	-	Saith, Arthur House
78 Woodbridge Street	-	White, Major J., Sr, House
82 Woodbridge Street	-	White J. Sr. House
92 Woodbridge Street	-	Barrett House

This district is limited to a portion of Woodbridge Street north from the Town Common and extends for about one mile (see Map 7).

MAP 7
Woodbridge Street Historic District
- National Register Properties



4. AREAS OF CRITICAL ENVIRONMENT

With its setting bounded by the Connecticut River and the Mount Holyoke Range and its abundant and rich history, and extensive vegetation, it is of no surprise that South Hadley has several areas of “critical environment”. Generally, these areas fall into six categories:

- The Mount Holyoke Range
- Large woodland tracts
- Farmland
- Scenic roads
- Riverfront
- Aquifer recharge

Mount Holyoke Range. A relatively large portion of the Mount Holyoke Range in South Hadley, as it is generally identified, is in public ownership with permanent protection. However, an equally significant portion of the Mount Holyoke Range is not in permanently protected status. Public lands can be sold. Private lands can change hands from a conservation-oriented owner to one who is not committed to conservation. As development moves northward and land prices continue to rise in South Hadley, the potential for owners to sell land for development and the amount developers are willing to pay will increase. Development of just a few of the larger tracts could result in irreversible loss of habitat.

A regional Land Use Task Force initiated an effort in 2004 to explore designation of the Mount Holyoke Range as an “Area of Critical Environmental Concern”. However, after reviewing the criteria for designation, particularly the rules governing the definition of the boundary for such an area, the Task Force elected not to pursue such designation even though the members were in agreement that the “Mount Holyoke Range” as it is commonly identified met the environmental criteria for such designation.

Large Woodland Tracts. The Town has several large woodland areas on the Mount Holyoke Range that abut the Towns of Amherst, Granby and Hadley. Some of these are not in conservation status, thus, they are subject to being sold for development. A few other large woodland tracts on and off the Mount Holyoke Range are in private ownership and could be sites for residential development, quarry development, or other ecologically disruptive uses. Several of these parcels are in public ownership and efforts must continue to obtain additional parcels currently in private ownership either through gifts, easements, outright purchase, or by a combination of these if the opportunities for hiking, camping, hunting, nature studies and the enjoyment of views and vistas are to continue.

Farmland. South Hadley has one significant actively operated farm. A few small “farms” also exist. However, much of the other land that is considered “farmland” by the general public are no longer used for active farm purposes. As the farm operations cease and residential development occurs, pressures increase on the remaining farms to convert to growing houses versus crops or dairy. Most apparent in this change is the Alvord Street area which has seen a rapid decline in open, agricultural lands. If this trend is left to continue, it will be the demise of the rural/farming community that this Town has been identified with. The State purchased the development rights to a 130-acre parcel on this street and continued efforts should be made to promote this type of land protection for the future.

Scenic Roadways. Town Meeting has designated three roadways as “scenic roads” pursuant to MGL, Chapter 40, Section 15C: Pearl Street, Alvord Street, and a portion of River Road. This designation offers protection for trees and stone walls when their alteration is to be part of a roadway improvement. While this offers some protection to the roads themselves, it does not protect the corridors or the adjacent land from the impacts of land development. Of particular concern are the properties at the foot of the Mount Holyoke Range and along the Connecticut River. In the case of River Road, the corridor along the Connecticut River has already been largely developed. Through the provisions of MGL, ANR lot development can occur along any of these roadways and have the effect of disrupting the features that make these roadway scenic.

Riverfront. South Hadley is graced by having over 6 miles of river along the Connecticut River and many more miles of frontage along numerous perennial streams and brooks. Increasingly, these sites are being viewed as attractive for residential development. Unfortunately, as noted earlier, these sites are increasingly being subject to development pressures.

Acquifer Recharge Areas. Fire District #2 obtains its water supply from wells on Dry Brook Hill. As development moves northerly in a more dense and concentrated fashion, the potential harm to the water supply increases. Much of the land which is the recharge area for these wells is private ownership. Some of the existing uses, such as quarrying, is adverse to the operation of the wells. While the Town has a Water Supply Protection Overlay District, this level of protection is not adequate for the most critical portion of the recharge area. Accordingly, public acquisition of the immediate areas around the wells should be a high priority. Additionally, the Town, working with Fire District #2 – Board of Water Commissioners, should take aggressive action to ensure that existing and future developments do not jeopardize these wells either from direct contamination or by deferring runoff which is needed to recharge the water supply.

4.6 ENVIRONMENTAL PROBLEMS

Due to its largely bedroom-community character, South Hadley is not as threatened by environmental problems as much as some of the nearby communities. However, the

community does have two potential sources of environmental problems unique to South Hadley:

- Sanitary landfill operation
- Hazardous waste sites

Sanitary Landfill. In 1992, the Massachusetts Department of Environmental Protection found that the unlined South Hadley sanitary landfill was leaking 1,4-dioxane into the groundwater. The landfill has been designated a priority “21E site.” The Chapter 21E legislation, titled the Massachusetts Oil and Hazardous Materials Release Prevention and Response Act, was enacted in 1983 to protect supplies, wetlands and wildlife habitat.

This contamination of groundwater continues being assessed for its threat to public health and to determine what remedial action needs to be taken. Owners of wells in the vicinity were notified and advised to use municipal water. Surface waters in the area are also being monitored for contamination, and Buttery Brook has been posted to alert the public to avoid using the waters for recreation.

The contamination from the landfill potentially affects open space and recreation in several ways. Buttery Brook Park is downstream of the contaminated groundwater plume. People picnic and play along the brook, which also passes through animal pens in the park. The Bynan Conservation Area, with its extensive wetlands and ponds, abuts the landfill. Local children play here year round. Wildlife in the wetlands could also be affected.

Independently of this problem, the Town closed and capped its unlined sanitary landfill, as is legally required by the State. With DEP approval, the Town contracted operation of the landfill to a private vender and opened a lined, expanded cell in 2005. The Town and its contractor have taken necessary measures to ensure that this new operation will keep any leachate out of the groundwater. The Town is currently considering further expansion of the landfill. Operation of the landfill has resulted in issues of odors affecting surrounding neighborhoods. The Town’s Board of Health continues to monitor the area and respond to complaints to ensure that no toxic or hazardous fumes are being emitted.

Hazardous Materials. Though largely a bedroom community, South Hadley has several industrial operations utilizing hazardous materials. These plants have, historically, not created any environmental issues. In the Fall, 2006, an industrial accident at one plant did create a hazardous materials incident of a temporary nature. Generally, the use of hazardous materials does not impact open space or recreation since the materials are generally confined indoors and do not escape to the groundwater supply or water bodies.

SECTION 5 - INVENTORY OF LANDS OF CONSERVATION AND RECREATION INTEREST

Lands having conservation and recreational interest were identified utilizing a four-step process which involved the following inventory and mapping activities:

- 1.) Inventory and mapping of the following vacant and recreational lands (*see Appendix H – Open Space Inventory*):
 - Vacant parcels of 10 acres or larger;
 - Vacant parcels abutting the Connecticut River or north of Pearl Street;
 - Parcels under Chapter 61, 61A, or 61B or the APR Program;
 - Vacant and recreational parcels owned by public entities (including, but not limited to, the Town of South Hadley and the Commonwealth of Massachusetts) and non-profit entities (including, but not limited, to the Kestrel Trust, Connecticut River Watershed Council, etc.);
 - Parcels owned by organizations with a recreational interest (including, but, not limited to the Gun Club, Redcliffe Canoe Club, South Hadley Swimming Club, Girl Scouts, etc.);
 - Parcels owned by special entities (such as, Mount Holyoke College, Northeast Utilities, Holyoke Gas & Electric, etc.)
- 2.) Identification as to which of the inventoried and mapped parcels from step 1 are permanently protected (*see Appendix G, Map 5 - Open Space Land and Appendix H – Part 1*)
- 3.) Application of wetland and other natural resource attributes and/or values associated with recreation potential to the inventoried properties
- 4.) Identification of those parcels mapped in step 1 which have natural resource or recreation potential significance but are not permanently protected open space (*see Appendix G, Map 5 - Open Space Land and Appendix H – Part 2*)

Lands abutting the Connecticut River or located north of Pearl Street/Amherst Road are deemed to have significant natural resource and open space value due to their relationship to the river and the range. This analysis resulted in a determination that there are approximately 2,721 acres of land which are permanently protected open space. However, nearly an equal amount, 2,773 acres of land are not permanently protected, but have been identified as having either natural resource or recreation potential (*see Appendix G, Map 5 - Open Space Land*).

5.1 AGRICULTURAL PROGRAM PARCELS

According to records of the Town Assessor's office, there are currently

- 2 parcels totaling 30 acres under Chapter 61 designation;
- 51 parcels totaling 1,057 acres under Chapter 61A;

- 4 parcels totaling 198 acres under Chapter 61B; and,
- 5 parcels totaling 245 acres under the APR program or Forest Legacy Program

Only agricultural lands having an Agricultural Preservation Restriction (APR) placed on them are protected in perpetuity. The one APR parcel in South Hadley totals 122 acres and is currently used as an active farm. Combined, those two parcels total 147.2 acres of protected open space.

The 1,273 acres under the Chapter 61, 61A, and 61B programs afford the Town the right of first refusal. Therefore, even though these parcels are not permanently protected at present, they are a bit closer to being protected than most privately held properties.

5.2 CONSERVATION RESTRICTION PARCELS

Only a few privately-owned parcels in South Hadley have conservation restrictions imposed upon them. These restrictions are conveyance of development rights to a public agency and non-profit conservation organizations empowered to hold such restrictions. In 1994, some 58.4 acres (the Lyman property) was placed under a deeded Conservation Restriction with the Commonwealth of Massachusetts/Department of Environmental Management, and two parcels, one in the Lithia Springs area with 57 acres and a second off of Woodbridge Street with 46 acres was placed in the Federal Forest Legacy Program.

To fulfill a condition of the Federal Energy Regulatory Commission (FERC) attached to the license for the Holyoke Dam, Northeast Utilities, Inc. (Holyoke Water Power and Holyoke Power & Electric) attempted to place a conservation restriction on approximately 100 acres abutting Bachelor Brook, Stony Brook, and the Connecticut River. The purpose of this “conservation restriction” was to protect the floodplain forest habitats. However, they conveyed this restriction to Holyoke Gas & Electric and did not follow procedures set forth by the Department of Conservation and Recreation. While the Holyoke Gas & Electric subsequently conveyed a conservation restriction on the same property to the DCR and the Town of South Hadley in 2007, the fact that the Town purchased the entire surrounding 284 acres from Northeast Utilities in 2005 and imposed a restriction on the entire 284 acres, made the issue of the conservation restriction a moot point.

As part of the approval of the Stonegate Subdivision off Alvord Street in the late 1980’s, conservation restrictions were conveyed for a number of “lots” and parcels in the subdivision. However, these restrictions were conveyed to the agency which preceded the Department of Environmental Protection. The current owner of the parcels has challenged their legality alleging they were not conveyed pursuant to Massachusetts law and procedures.

5.3 PRIVATE RECREATION PARCELS

Four private organizations own land used for recreational purposes primarily for use by their members.

South Hadley Swim Club. The South Hadley Swim Club owns a site of approximately 10 acres off Amherst Road. A member-owned organization run by a Board of Directors, the club's purpose is to encourage athletic exercise, namely swimming and outdoor recreational activities. On the ten acre site, the club owns and maintains several facilities consisting of a concrete swimming pool 75 feet long by 28 feet, 8 inches wide, an octagonal shaped wading pool approximately 19 feet across, a basketball court, locker rooms and a covered picnic area. Membership in the Swim Club is open to anyone. There is an initial membership fee and yearly dues. The Club facilities are open for member's use from Memorial Day through Labor Day.

Redcliffe Canoe Club. The Redcliffe Canoe Club, a private club with membership fees and yearly dues, owns a 27,000 square foot parcel along Canal Street abutting the Connecticut River. This site is used for boating, swimming, fishing and has a boat launch ramp on the River.

Mount Holyoke College. Mount Holyoke College started in 1837, with a single building on a single lot on what is now called College Street, has since grown into a complex of academic buildings, residence halls, sports facilities, woodlands, a brook including three ponds and many wooded areas. The College's property is available to Mount Holyoke College students, faculty, staff, alumnae and invited guests. While the College has liquidated some of its unused parcels over the past 7 years, the College retains significant open space lands and facilities including:

- The Orchards Golf Course which was built in the early part of the 20th century by Joseph Skinner and given by him to the College. This ownership continues but the management and operation of the club has been contracted to Arnold Palmer Golf, Inc.
- The College's Athletic Fields and Track sit on land abutting Silver Street and have been made available for limited community and resident use. This open use policy may become slightly more limiting as the College undertakes a major redevelopment of the fields and track to bring them into compliance with NCAA requirements during 2007. However, the College has assured the Town that the high school's use of the facilities may be continued.
- A 7-acre parcel of land along the Connecticut River and north of Ferry Street, acquired in 2005 from Northeast Utilities, Inc. The College is attempting to obtain permits to allow development of a boathouse and dock for use by the College's student and community rowing programs.
- An 18-acre parcel on the Mount Holyoke Range which includes a cabin that is used by the students.

Western Massachusetts Girl Scout Council. The Western Massachusetts Girl Scout Council own and operate Camp Lewis Perkins, a 21.7 acre outdoor facility with frontage on Bachelor Brook and the Old Pearl City Pond lake bed. Facilities at the camp include a lodge, troop cabin, 9 small cabins, a maintenance building, two platform tents, one hard-roofed tent, latrines, flush toilets, an in-ground pool, hiking trails, a playing field, and an outdoor cooking area. During July and August, four to six sessions of week-long camp are conducted. Each session serves about 100 campers. Weekends from March through October, troop camping takes place. Troops also camp for longer periods during school vacation and occasional day events take place during winter. Site use fees are charged. The camp is available (when space permits) on an occasional basis to groups with similar missions to the Girl Scouts.

5.4 PUBLIC AND NONPROFIT PARCELS

Commonwealth of Massachusetts. The Commonwealth of Massachusetts owns 1,265 acres of land including some buildings within the Town of South Hadley. Nearly all of this land is on the Mount Holyoke Range managed as part of the Skinner State Park and Mount Holyoke Range State Park under the auspices of the Department of Conservation and Recreation (DCR). Within the Mount Holyoke Range, in South Hadley, the DCR manages approximately 1,256 acres.

Skinner State Park not only contains the Summit House, an historic hotel described in Section 3 of this report, but also provides scenic views of the Connecticut River Valley and links to the Metacomet-Monadnock hiking trail. The park is located at the far westerly end of the Mount Holyoke Range. Tourists, hikers, and cyclists come for the views from the top and the challenge of climbing to the Summit and/or traversing the ridgeline. The only vehicular access to Skinner Park is via Summit Road off of Route 47 in Hadley, Massachusetts.

Mount Holyoke Range State Park occupies the center and eastern portions of the Mount Holyoke Range in South Hadley. During the past 7 years, DCR has increased its holdings for this park including the purchase of approximately 600 acres from South Hadley Fire District #2.

Outside of the Mount Holyoke Range, the Commonwealth owns only a few parcels which are highway related. One of these, the state highway garage sits on Route 33 at Old Lyman Road.

The State Pool site is also located on Route 33 adjacent to BATTERY Brook Park. Plans are underway to demolish the pool and redevelop the site for tennis courts.

Nonprofit Organizations. Two parcels totaling 5 acres within South Hadley are owned and managed by local land trusts:

- The Connecticut River Watershed Council parcel consists of 5.9 acres just north of Cove Island and slightly inland from the Connecticut River. This parcel is accessible by River Road and is fully contained in the 1% Flood Hazard Zone.
- The second parcel, the Kestrel Trust parcel, is located in the Mount Holyoke Range and is 4.3 acres in size.

Town of South Hadley Parcels. The Town owns a significant amount of land set aside for conservation and recreational purposes. Generally, these lands are managed by either the Conservation Commission or the Recreation Commission. It should be emphasized that municipal ownership does not convey that the land is protected from development. This section will distinguish between those lands that municipally-owned and protected from those that are not permanently protected.

- Town of South Hadley. The Town owns approximately 1,687 acres of land. For the purposes of this plan, only lands owned or reserved to be managed by the Conservation Commission or established as park lands are inventoried as protected lands. Other Town-owned lands are evaluated as unprotected lands which may have conservation or recreation interest. It should be noted that some lands are under management by the Conservation Commission by vote of a Town Meeting. However, such lands are not considered permanently protected since such a vote could be replaced by a vote to have the lands managed by another department of the Town.

Conservation Commission. Approximately 2/3's of the town-owned lands (or 1,191 acres) are owned or reserved to be managed by the Conservation Commission. These parcels are distributed throughout the community from the southeastern corner at the end of Lyman to the northern reaches of the Mount Holyoke Range. Westerly, the Commission manages several different areas which abut the Connecticut River.

Three priority goals have guided land acquisition for land acquisition:

- Mount Holyoke Range;
- Land along streams ("greenbelts"); and,
- Buffering for existing conservation areas.

Protecting land in these areas helps to preserve water quality, wildlife habitat, and the Town's aesthetic and recreational resources. Recent acquisitions have met these objectives. Over the past 7 years, the most significant acquisition of land for conservation purposes was the 2005 purchase of the 284-acre Bachelor Brook/Stony Brook Conservation Resource Area along the Connecticut River and Ferry and Hadley Streets. A \$500,000 Self-Help Grant, a \$300,000 donation from Mount Holyoke College, and assistance from the Trust for Public Lands aided this acquisition. However, during this time, the Conservation Commission has primarily acquired new land through donations. These donations have principally included the 3.4-acre LeBlanc Conservation Area on Brainard Street

and small additions to the Bagg Conservation Area and the Bynan Conservation Area.

The Conservation Commission administers at least 13 distinct Conservation Areas including:

- Bachelor Brook/Stony Brook Conservation Resource Area (284 acres). Acquired in 2005 with a \$500,000 Self-Help Grant and a \$300,000 donation from Mount Holyoke College, this parcel is the largest and most biologically diverse of the properties managed by the Commission. Most of the property lies north of Ferry Street, abuts the Connecticut River and Bachelor Brook. A smaller portion of this area lies south of Ferry Street, along Stony Brook. At present, the area is largely undisturbed, but is traversed by major power line easements and a small portion is farmed by a local farmer under an agreement with the Town. Among the unique features of this property are two of the best examples in the state of small floodplain forests and numerous rare habitats as noted previously. With its access to the Connecticut River and proximity to the Mount Holyoke Range, there is interest in developing a very limited trail system which would link the central portion of the town with the Mount Holyoke Range.
- Bynan Conservation Area (142 acres). Lying in the southeast corner of town, the Bynan Conservation Area was part of an acquisition of approximately 142 acres in 1978 from the Bynan family. Of this land, purchased with the assistance of Self-Help funds, about 40 acres were reserved to accommodate expansion of the South Hadley Sanitary Landfill. The remainder were reserved for conservation and recreation purposes. Several smaller abutting parcels have recently been protected also. The area consists of pine barren type of habitat; pitch pine and oak woodlands are interspersed with wetlands and ponds that often dry up in the summer. Old wood roads wander throughout the area, facilitating hiking and cross-country skiing. One trail loop has been marked, and periodic cleanups remove trash and abandoned vehicles. Further work is needed to develop and reroute trails as the landfill expands. Access by off-road vehicles that dump trash and tear up woods and wetlands needs to be blocked more effectively. Entrances to this area are from the east end of Lyman Terrace, New Ludlow Road, and Bartlett Street. Recent discussions have arisen regarding the possible expansion of the Landfill into a small portion of this property.
- Black Stevens Conservation Area (62 acres). Perhaps the most visible and used of the conservation areas due to its proximity to South Hadley High School and location on Newton Street, the Black Stevens Conservation Area provides marked walking trails extending from Newton Street to the Plains Elementary School at the corner of Route 33 and Route 202. Situated along Newton Street, Stevens Pond is probably the most publicly identifiable

feature of this area. This property was acquired in three sections: smaller tracts in 1963 and 1966, and then in 1981, a 47-acre parcel from the Stevens Paper Mill, all with financial assistance from the state Self-Help Program. Newton Smith Brook flows through a wooded ravine into the pond. The forested site includes oaks, maples, paper birch and hemlocks, with wildflowers such as pink lady's slippers in the spring. Great horned owls have been seen here. Classes from both schools use this area for nature study. Currently trails are kept open primarily by use, with occasional maintenance by volunteers and the high school cross country track team. The Conservation Commission has sought funding for assessment of the causes and potential solutions for rapid filling of the pond with sediment, and then implementation of the recommended measures of restoration of the pond.

- Titus Pond Conservation Area (3.8 acres). Consisting of 3.8 acres of pond and its feeder stream and associated wetlands, this site is located on Newton Street between Queen Circle and Camden Street. The pond had been used for fishing by local children for years, but is plagued by eutrophication and an unsightly growth of duckweed on the surface in the summer.
- Warner Conservation Area (9 acres). Accessible from Mosier Street, this area has a path which leads into a wooded honeysuckle grove on a hill, and then down to a wet meadow and stream crossed by a boardwalk to an open hayfield. These nine acres were acquired from the Warner family in two portions, in 1983 and 1987, with assistance from the Self-Help funds. The area is named after Edwin Warner, former South Hadley Tree Warden. Yearly mowing is necessary to keep the hayfield on this parcel open. Development of the Mountainbrook subdivision is underway along the southern edge of the area. This development may increase use of the area and potentially poses some hazards of uncontrolled access.
- Hawkins Conservation Area (3 acres). The Hawkins Conservation Area is a wooded wetland bisected by a stream at the corner of Silver Street and Chapel Hill Drive. It was sold to the Conservation Commission in 1977 for a small sum, to be used as a bird sanctuary in memory of Professor Everett D. Hawkins of Mount Holyoke College.
- Bagg-Pierce Wildlife Sanctuary (32 acres). Lying along the Connecticut River, this area was begun in 1997 with the donation of 30 acres by Malcolm Bagg to honor his wife and mother-in-law. Five additional acres have been added to this sanctuary with a recent purchase funded by the Valley Land Fund. This site is partly in the 100-year floodplain. Several trails and an old woods road traverse the site providing access for wildlife viewing and enjoyment.

- Edward Trompke Conservation Area (10.1 acres). Half of this area was acquired from the South Hadley Conservation Society. The remaining 5.26 acres was donated in 1998 by Alice Trompke to honor her late husband. It is characterized by floodplain forest which run along Stony Brook. This area adjoins a similar conservation area in Granby (also donated by Mr. Trompke). Trails were proposed in the South Hadley portion to connect to an existing trail in the Granby conservation area; however, neighbors objected and the proposal was set aside.
- Connecticut River Conservation Land (31 acres). The Commission also oversees 31 wooded acres along the Connecticut River, which includes a narrow strip between Upper River Road and Lower River Road, and land which abuts the municipal golf course parcel. The section between Upper and Lower River Road is bisected by a graded gravel road, with a high, steep bank dominated by hemlocks along the river, and a wetland on the other side. The Town has improved the road just enough to allow access of emergency vehicles if local residents are trapped by flooding of Lower River Road. Access to the river from this land is made impossible by the height and steepness of the bank. The Commission hopes to see development of walking trails that begin on the River Road parcel and continue on the Municipal Golf Course land.
- Mount Holyoke Range – Western Part. Conservation lands now include a number of undeveloped wooded parcels on the Holyoke Range and a number of smaller parcels along streams. On the western section of the Holyoke Range in South Hadley, the Town now protects 148 acres of conservation land, including the eight (8) parcels transferred from the Conservation Society. Several parcels totaling 111 acres along Dry Brook abut Skinner State Park. Other scattered parcels add to the mosaic of protected land west of Lithia Springs Reservoir.
- Mount Holyoke Range – Eastern Part. On the eastern part of the Holyoke Range, between the Notch and Lithia Springs Reservoir, about 200 acres are now under the management of the Conservation Commission. These parcels include a 20-acre Conservation Society parcel, a 59-acre parcel given to the Town in 1972 by Elvina Ball Stewart, the Bourbonais Parcel, and several parcels recently found to belong to the Town and now protected as conservation land. A number of the steeper parcels in this area harbor rare plants on the south-facing rocky slopes. Rare reptiles and amphibians have also been found here, and on nearby private parcels. Additional land protection is still needed on the Mount Holyoke Range, if habitat for these rare species is to be preserved.

Recreation Commission and Golf Commission. Approximately 19% of the town-owned lands (or 306 acres) are reserved for more active recreational activities under the auspices of the Recreation Commission or Golf

Commission. These parcels are more concentrated than the Conservation Commission land. Generally, the parcels are located in the southern half of the town. South Hadley has a variety of playgrounds and athletic and recreation facilities:

- Beachgrounds Park. Located in the South Hadley Falls area, this park is the central focus of many community and neighborhood activities and includes three (3) baseball/softball fields, one of which is lighted. The same fields are used for soccer and practice football in the fall. Facilities include: One (1) basketball court and individual playground equipment.

A wading pool was closed and removed in 2006 ago due to maintenance and demand issues. However, plans are underway to develop a “spray park” to replace the wading pool. Efforts to obtain donations for development of the “spray park” have been quite successful, although the total amount of funds needed have not been raised. Development of the “spray park” is envisioned as one key element of a total redevelopment of the Beachgrounds Park which has reached a high level of functional obsolescence due to its age and changes in recreational interests and needs.

The Playground Committee noted in 1998 that Beachgrounds Park is in need of new playground equipment some of which has been in place for over forty years. Though nine years old, this analysis still holds true today. Further, the report also suggested that the park should be redesigned to more fully and safely allow for the variety of activities it offers which includes baseball, softball, basketball, football, and soccer. Installation of the “spray park” will further the need for this park redesign.

- Buttery Brook Park. This facility is located on Route 33 just north of Chicopee, near several areas of active residential and commercial development. Adjoining the site is the state swimming pool facility which has been closed and is slated for demolition. Facilities include: Two (2) basketball courts, one (1) playground lot, individual playground equipment, picnic area, and skate park.

Buttery Brook Park has long been the community’s focus as the Town’s recreation centerpiece. To that end, the Selectboard established a Revitalization Committee to review the site and recommend how to better utilize the property. This committee evolved into a volunteer organization which has developed plans for revitalization of the park and carried out different recreational programs at the park. A skate park opened during the summer of 1999 through the efforts of various volunteers. Current plans call for redevelopment of the adjoining swimming pool site for tennis courts. Relocating of playground equipment within the park is a possibility along with a redesign of the entrance to the park.

Potential acquisition of private property that abuts the park would help provide an athletic field to the site. To this end, the condo association which owns the land at Shadowbrook Estates has indicated they may be willing to donate some abutting land for expansion of Buttery Brook Park. The Town lacks sufficient areas to play soccer, lacrosse, baseball, and softball and this property would be an ideal choice to develop for athletic purposes.

- High School. Located adjoining the South Hadley High School, this complex of facilities are primarily used for school-related activities during the school year. Facilities include: One (1) lighted multi-purpose field (football, soccer, lacrosse), two (2) baseball fields, one (1) softball field and one (1) running track which is or marginal use. The athletic fields were upgraded and slightly reconfigured as part of the building renovation project completed in 2001.
- Michael E. Smith Middle School. Located along the north side of Mosier Street, this facility is also located in proximity to substantial residential developments and the Mosier Elementary School. Facilities include: Three (3) multi-purpose fields (soccer, lacrosse). A soccer/lacrosse field was developed as part of the building renovation project in 2001.
- Plains Elementary School. Facilities include: One (1) baseball/softball field which is also utilized for mini soccer fields in the fall. Three (3) separate playground areas.
- Center School site (Hampshire Christian Academy). Facilities include: One (1) baseball/ softball field which is also utilized for soccer in the fall.
- Woodlawn School site (Council on Aging). Facilities include: One (1) basketball court, one large playground area installed in 1998; one (1) baseball/softball field which is also used for soccer in the fall.

As a result of this analysis at the Woodlawn School site where the Council on Aging is located, a new playground and equipment was installed through the efforts of the Playground Committee. The Committee examined all the playgrounds in Town, documented their findings and designated the Woodlawn site to fill a void where playground equipment has been removed. Buttery Brook and Beachgrounds Park have been identified by the Committee to upgrade the existing playground facilities.

- Mosier School. Two (2) basketball courts, one (1) playground area, two baseball/softball fields which are also used for soccer in the fall.
- Town Farm. Located along Route 47 (Hadley Street) and abutting the Bachelor Brook/Stony Brook Resource Conservation Area, this land was considered for many years as a possible site for a new school. However, in

2003, recognizing the Town's growth pattern and more immediate and long-term needs for outdoor recreation fields, the Town worked with the Marine Corps to have a portion of this site transformed into several athletic fields. A portion of the site is more appropriately reserved for natural resource conservation. Consideration should be given to exploring the possibility of adding a portion of the Town Farm to the Bachelor Brook/Stony Brook Resource Conservation Area.

- Ledges Golf Course. With the assistance of a \$500,000 Urban Self-Help Grant, in 1998, the Town acquired a 244 - acre tract west of Alvord Street and adjoining Lower River Road in 1998. Acquisition of this land was for the purpose of developing a multi-purpose recreation area, primarily through development as an 18-hole golf course. In 1999-2000, the Town developed the golf course including a temporary clubhouse. Subsequently, the Town developed a driving range along the Alvord Street frontage. This acquisition has preserved this parcel for passive recreation including the enjoyment of views of the Mount Tom Range and the wildlife and foliage which characterize the area. Without this acquisition, this tract would likely be developed into large-lot subdivisions as is the case with the land to the south of the property.

Fire District #2. Fire District #2 is a separate public entity which provides fire protection and water service to the northern half of the town. At one time, the district utilized the Lithia Springs Reservoir as a primary water supply. Consequently, to protect that water supply, the district owned over 600 acres of land in the Mount Holyoke Range. With the district's conversion to wells as the source of their water supply, they discontinued use of the reservoir. Subsequently, in 2004, the Department of Conservation and Recreation (DCR) acquired most of this land from the district. However, Fire District #2 continues to own 84 acres of largely undeveloped land in South Hadley:

- Mount Holyoke Range. The district owns three parcels totaling 65 acres which lie north of Pearl Street or Amherst Road. None of these parcels are used for either district operations nor retained to protect the water supply. Therefore, these parcels should be considered surplus. Discussions have been held regarding the possible sell of the land.
- Dry Brook Hill. The district owns 19 acres on Dry Brook Hill as part of the water supply system. The district's current wells are located on a portion of the property.

Fire District #1. Fire District #1 is a separate public entity which provides fire protection and water service to the southern half of the town. At one time, the district utilized the Leaping Well Reservoir as a primary water supply. Consequently, to protect that water supply, the district owned land abutting the reservoir. With the district's conversion to Quabbin Reservoir as the source of their water supply, they discontinued

use of the reservoir. However, the district has continued to own 45 acres of land in the immediate vicinity of the reservoir. A portion of this land is used for the District's garage and Water Department offices. However, most of the land is vacant. Over the past year, the district has contemplated selling a portion of the property to a private developer with access off Bartlett Road.

5.5 OTHER SIGNIFICANT PRIVATE PARCELS

Within South Hadley, there are also a number of privately-owned parcels which have the potential for providing usable open space. Approximately 37 such parcels totaling over 700 acres lie within the Ultimate Acquisition Boundary outlined by the Department of Environmental Management (DEM) (now, Department of Conservation and Recreation – DCR) and could provide access to and views of the Mount Holyoke Range. Other significant parcels abut the Connecticut River and could provide access to the river and/or a potential trail leading to the Mount Holyoke Range.

5.6 UTILITY COMPANY PARCELS

Historically, Northeast Utilities/Holyoke Power and Electric Company/Holyoke Water Power Company has been a major owner of utility lands in South Hadley. However, they sold a considerable portion of their land holdings in 2003 to the Holyoke Gas & Electric Department (HG&E) as part of the transaction whereby they sold the Holyoke dam to HG&E. Another significant transaction occurred in 2005 when Northeast Utilities/Holyoke Power and Electric Company/Holyoke Water Power Company sold the 284 acres abutting Ferry Street and Hadley Street to the Town of South Hadley for the Bachelor Brook/Stony Brook Resource Conservation Area. Therefore, HG&E and Northeast Utilities/Holyoke Power and Electric Company/Holyoke Water Power Company continue to own some significant parcels of land in South Hadley, albeit substantially less than the amount previously owned by Northeast Utilities/Holyoke Power and Electric Company/Holyoke Water Power Company.

Northeast Utilities/Holyoke Power and Electric Company/Holyoke Water Power Company. Despite selling over 300 acres during the past 5 years, Northeast Utilities (or its subsidiaries) still retain ownership of approximately 67 acres in some potentially beneficial locations in South Hadley:

- Alvord Street/Lamb Street corridor. Thirteen parcels totaling 58 acres and additional acreage in easements form a right-of-way for high tension wires paralleling portions of Alvord Street and Lamb Street from the South Hadley/Chicopee line northward to a point north of the mouth of Bachelor Brook at the Connecticut River. This corridor is long and narrow in shape and would provide an opportunity for a public access corridor linking several publicly-owned parcels including the Bachelor Brook/Stony Brook Resources Conservation Area. At present, these parcels are informally used for recreation trails and provide linkages from the surrounding neighborhoods to Bachelor

Brook and Brunelle's Marina. Map 8 shows the geographic relationship between protected lands in Town and these parcels presently owned by Holyoke Water Power Company. With only minor interruption, connecting the Northeast Utilities/Holyoke Power and Electric Company/Holyoke Water Power Company land with the other public and protected private lands could provide the potential for public access running continuously from South Hadley Falls to the top of the Mount Holyoke Range.

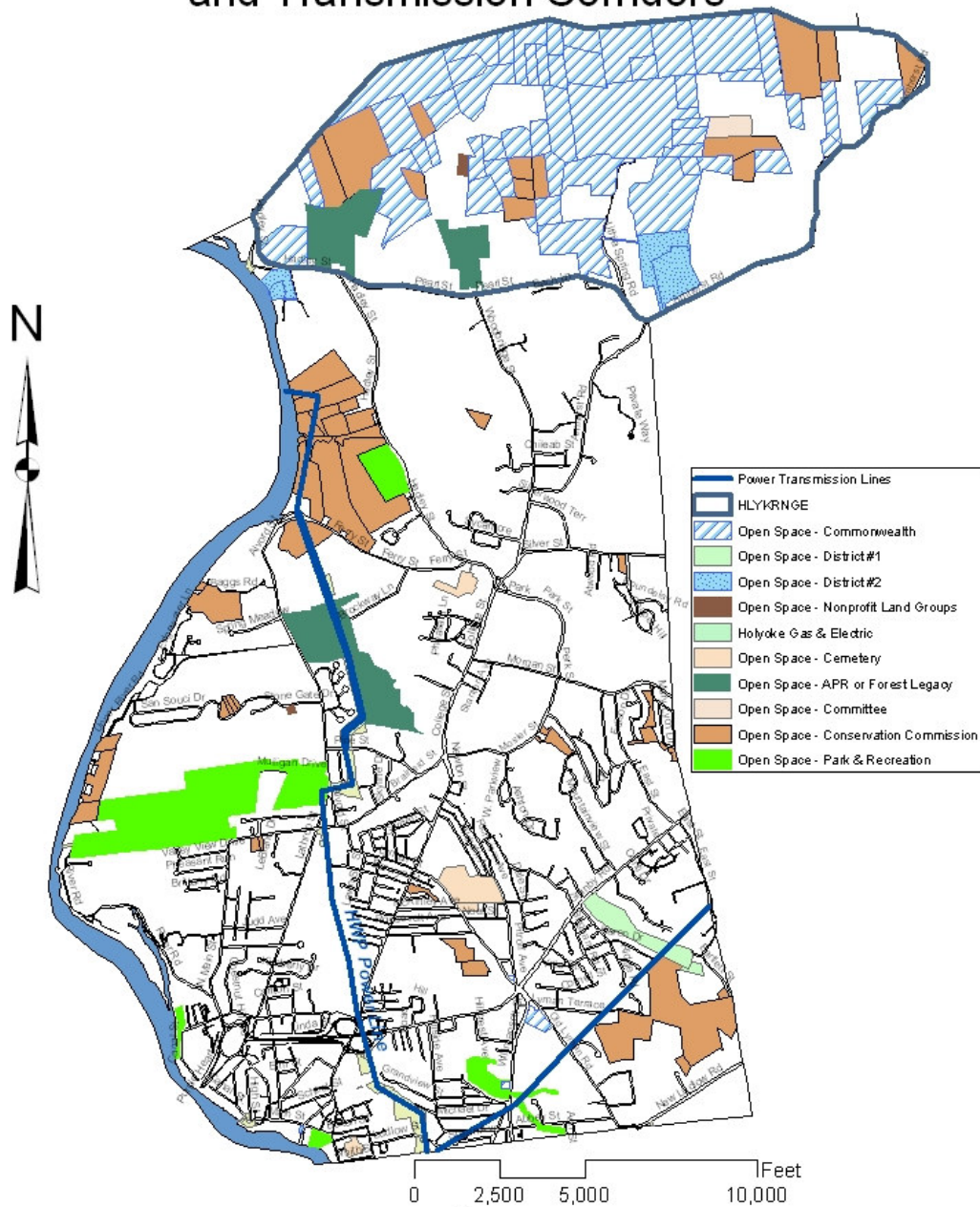
Holyoke Gas & Electric (HG&E). Holyoke Gas & Electric (HG&E) now owns some small, but relatively significant land parcels in South Hadley, predominately in the area of South Hadley Falls.

- Holyoke Dam and riverfront parcel. HG&E now owns the Holyoke Dam and a 15-acre parcel which contains the Texon Building, and buildings accessory to the dam, and undeveloped land along the Connecticut River adjoining the Route 116 bridge and Main Street. As part of the License for the Holyoke Dam, the Federal Energy Regulatory Commission (FERC) is requiring Holyoke Gas & Electric to construct a Riverside Park which will have passive recreation (fishing, picnic areas, and viewing areas) in a portion of this parcel. As a condition of permitting alteration of the Texon Building to install a modification of the dam, HG&E will also be renovating the gatehouse area into a park. The entire reach of the canal area is listed on the National Register and this entire area falls under the Historic Preservation Act.

The HG&E also owns a related parcel north of the dam abutting the Connecticut River along Canal Street. This parcel is not proposed for any development, but is maintained as open space.

- Cove Island. HG&E also owns the 51.4-acre peninsula known as Cove Island (acquired from Northeast Utilities). A Conservation Restriction has been developed for a large portion of this area which is not currently developed. The HG&E will be applying this CR to the property in the near future. The remaining portion of Cove Island is developed with dwellings which began as "seasonal" homes. The occupants lease their area from HG&E under very limiting conditions. Under the Comprehensive Recreation and Land Management Plan required by FERC, the long-term expectation is that all of Cove Island will become a natural area as the "seasonal" homes are eventually phased out.
- Bicentennial Canal Park. HG&E also owns the Bicentennial Canal Park located off Canal Street. This park is leased to the Town which maintains nature trails, footpaths, picnic areas/park areas, and associated other uses.

MAP 8 Permanently Protected Open Space and Transmission Corridors



Source: South Hadley Planning Board, 2007

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SECTION 6 - COMMUNITY GOALS

6.1 DESCRIPTION OF PROCESS

General Overview. This update was initiated as part of a more thorough community planning effort in 2003-2004. With funding provided pursuant to Executive Order 418, the Pioneer Valley Planning Commission worked with the Planning Board to undertake a Community Development Planning Process which addressed Natural Resource Protection and Open Space, Housing, Economic Development, and Transportation issues. A very successful community survey effort and active public forums characterized this process and provided significant public input into the planning process. Input and outcomes of this broad community planning effort served as the basis for developing this update.

Current Update – General Process. Development of this specific plan update involved a multi-step, interactive approach:

- Review of the previous Recreation and Open Space Plan
- Inventory and assessment of the actions taken since 1999 regarding open space and recreation facilities and improvements
- Assess the status of the previous action plan recommendations
- Analysis of the 2003-2004 survey and public forum input.
- Updating of the previous Recreation and Open Space Plan database
- Review of the recommendations of the 2003-2004 Community Development Plan as they relate to the requirements of this Recreation and Open Space Plan.
- Consultation with the various community organizations and town departments regarding recreation and open space issues.
- Drafting of the update and review of the draft by various community organizations and town departments.
- Public hearing and review by the Selectboard at a televised meeting
- Approval of the proposed plan by the Selectboard.

Public Input and Involvement. Public input was vital to development of this update. The first aspect of this involvement was through the 2003-2004 community planning effort which involved several key and successful approaches to obtaining community input:

- Community Survey. The survey effort involved mailing of 950 surveys to households. As part of the survey effort, articles were published in the newspapers and flyers posted around town to encourage recipients to respond to the surveys. Responses were received from one-third of the households (this compares to a typical community survey response of 15% to 25%). Efforts to encourage more surveys through South Hadley's Know Your Town (KYT) Committee were not successful. Therefore, the 2003 surveys were used as the basis for community attitudes, supplemented by input at the public forums which were conducted.

- Public Forms. A series of 4 public forums were conducted following the survey effort. These forums provided an opportunity for the public to identify in more details issues and recommendations pertaining to the 4 issues areas and a broad vision for the community. One of the forums focused almost exclusively on Natural Resources Protection and Open Space. To facilitate public participation during the forums, notices and articles were published in the newspaper and posted on the Town's website, and flyers were posted at significant locations around town. An email list was composed of those persons interested in obtaining notices of further meetings on the topics. Several of the public forums were televised on the community's public access channel.
- Public Meetings. Upon conclusion of the public forums, the Planning Board conducted 4 meetings focused primarily on the community planning effort and solicited town departments and public input on the final recommendations in the Community Development Plan.

To further the community involvement in this Recreation and Open Space plan update, the following steps have been taken to encourage involvement in this planning effort:

- Surveys were attempted through several Know Your Town meetings. Unfortunately, few surveys were returned. Therefore, the 2003-2004 survey effort was considered more useful.
- Various community officials, boards, and community organizations were consulted regarding recreation and open space issues and needs.
- A draft of the proposed goals and action plan were posted on the Town's website to solicit public input.
- The proposed plan was submitted to key town and community boards for review and comment.
- The Selectboard reviewed the proposed goals and action plan at a televised public hearing.

Final Review and Approval. The draft update of the Recreation and Open Space Plan was distributed to the four key boards/commissions/departments for their review and comments: Conservation Commission, Recreation Commission, Golf Commission, and Planning Board. A public review was held on June 26, 2007 by the Selectboard to obtain public input on the final plan recommendations. Following the public review, the plan was finalized.

6.2 STATEMENT OF OPEN SPACE AND RECREATION GOALS

The primary goal of this plan is to continue the effort to achieve the objectives of preserving, protecting and expanding the existing cultural and natural resources, and

maintaining and expanding the available recreational opportunities which make South Hadley such a beautiful community in which to live and play. As such, the plan has 3 distinct overarching goals:

- “The Range” – Retain, enhance, and protect the Mount Holyoke Range and its scenic qualities, habitats, geology and recreational opportunities.
- “The River” – Ensure appropriate access to and protection of the riverfront for the benefit of all.
- “Parks and Playgrounds” – Ensure the availability of spaces and facilities to meet the active recreation needs of the diversity of residents of all generations and to ensure the continued maintenance of the facilities and programs.

In addition to these forementioned vital resources of the town, there is the necessity to protect the natural resource areas encompassing streams, ponds, vernal pools, floodplains and wetlands through appropriate land use controls and public acquisition of lands throughout town, and to increase public awareness to the open space and recreational opportunities that are available to meet present needs as well as to plan for the future needs.

SECTION 7 - ANALYSIS OF NEEDS

7.1 SUMMARY OF RESOURCE PROTECTION NEEDS

A number of resource protection needs have been identified. Protection and access to the Mount Holyoke Range and protection of the Connecticut River are the prime concerns. Any type of development within the 100-year flood boundary area as delineated on the Flood Insurance Rate Maps for the Town under the National Flood Insurance Program should be avoided in the future, and the efforts of organizations such as the Connecticut Valley Action Program (see Appendix B) should help protect the river and other streams in Town. Conservation easements, fee simple acquisition and more emphasis on the Mount Holyoke Range GOALS Plan (see Appendix B) are needed for further protection of the range.

An apparent lack of awareness of wetlands and their importance is a shortfall that needs attention. While the Town has acquired significant wetland areas and adopted a Wetlands Bylaw which offers significant protections, there is an apparent lack of public awareness of the need to protect these areas. This results in intentional and unintentional damage to wetlands and vernal pools, vandalism of conservation areas, and other actions which degrade these vital resources.

The Town has been aggressive in its efforts to protect existing and future residents in the area surrounding the landfill. As the landfill continues to be used, and even expanded, continuation of these efforts by the Town and the landfill operator is needed. As the Department of Environmental Protection previously determined that this area is a priority 21E site and the Town and its landfill operator have worked diligently to address the DEP concerns, every precaution should be taken to continue to ensure public safety.

Finally, increased sensitivity to the habitats of the diverse species which populate South Hadley and its environs, including the bald eagle and the shortnose sturgeon, is needed. Any future development or point and non-point source pollution activities should undergo great scrutiny, because these are federally protected species.

Responses to the 2003 Community Development Plan survey provide some quantitative insight into residents' resource protection concerns and priorities as well as changing perceptions of the community (see Appendix D – Community Survey).

- The primary reason respondents live in South Hadley was noted to be the small town atmosphere (39.3% of respondents)
- In terms of important community features, 90% of respondents indicated that the small town, rural atmosphere and open spaces were either important or very important with over half the respondents indicated “very important” for both features. Farms were rated similarly by nearly 75% of the respondents.
- Over the next 10 years, over 75% of the respondents indicated the following should be community goals:

- Protect natural resources and environmental quality
 - Protect public water supplies
 - Preserve character of town
 - Protect farmland and open space
 - Protect and enhance access to the Connecticut River
 - Protect scenic views of, and access to, the Mount Holyoke Range
- (Most of these issues were rated as priority goals by 85% or more of the respondents.)
- Over half of the respondents unequivocally indicated the Town should acquire or protect open space lands. Another third supported such actions, but only if outside resources were used.
 - Three-quarters of the respondents support using zoning bylaw regulations to promote protection of open space and farmland.
 - Nearly three-quarters of the respondents felt that threats to the environment is very much a problem while slightly over half also felt that the loss of farmland, loss of small town character is very much a problem.

7.2 SUMMARY OF PARKS AND FACILITY NEEDS

Over the past 7 years, several groups have initiated efforts to expand the active recreation facilities. These efforts have led to an expansion in the number of fields, but also a recognition that the community's parks and facility needs include:

- Revitalization of Buttery Brook Park
- Spray parks
- Additional athletic fields
- Tennis courts
- Golf facilities

Responses to the 2003 Community Development Plan survey provide some quantitative insight into residents' recreational interests (see Appendix D – Community Survey).

- Over 80% of the respondents indicated recreational opportunities are either important or very important.
- Nearly three-quarters of the respondents were supportive of a large, multi-use community park with areas and facilities for recreational activities, community events, band concerts, ball games, etc. However, slightly over half of the persons so responding indicated they would be supportive of such a facility if outside resources were used to acquire and build the park.
- Over the next 10 years, over 80% of the respondents indicated improving the parks and recreational opportunities should be a community goal.
- Approximately 85% of the respondents supported construction of bicycle/walking/hiking paths. However, nearly half of the respondents would only do so if outside resources helped fund the paths.
- Of twenty different recreational activities listed, nearly 75% listed "walking" as the recreational activity in which they participate. Bicycling and swimming

were listed by slightly over one-third of the respondents. Golf and bird watching were listed by approximately one-quarter.

7.3 SUMMARY OF COMMUNITY NEED

South Hadley is a unique Connecticut Valley community by virtue of its location in the transition zone between the densely populated urban centers to the south and the more rural agricultural communities to the north. In the past, both of these conditions have influenced the Town's open space and recreation planning and are expected to do so in the future as well. Add to this geographic blend the dominance of the two most important regional landscape features, the Mount Holyoke Range and the Connecticut River, and the community's growth as a bedroom community with an aging population and the framework is established for meeting South Hadley's open space and recreation needs.

These needs are appropriately expressed by several key organizations and boards which are vital to meeting the community's open space and recreation objectives: the Recreation Department and Recreation Commission, Golf Commission, Canal Park Committee, and the Conservation Commission. Each has contributed its own perspective to the drafting of the "action plan" (*see Appendix G, Map 6, Action Plan*). Each set of concerns is a bit different.

The Recreation Commission points to a number of facility improvement/expansion needs:

- additional playing fields (soccer, baseball, softball, lacrosse) throughout the Town
- redevelopment of the Beachgrounds and Buttery Brook Parks
- tennis facilities beyond that offered by Mount Holyoke College
- small parks within the heavily developed neighborhoods in the southern section of town.

The Recreation Commission's view is underscored by the heavy demand on the existing facilities and the lack of sufficient facilities to meet the needs of the steadily growing school-age population. See the recreational facilities inventory in Section 5.2.1.

The Recreation Commission has noted that during the past 7 years, community efforts have been successful at generating community support and limited funding for new facilities including:

- A spray park
- Tennis facilities
- Redevelopment of the Buttery Brook and Beachground Parks

In contrast, the Conservation Commission has expressed various key resource protection needs:

- riparian areas along all waterways in South Hadley, particularly the Connecticut River and Bachelor and Stony Brooks,
- increased protection of the Conservation Areas from motorized vehicles and vandalism,
- expansion of the Mount Holyoke Range trail system for hiking, skiing, cross-country skiing, etc., as well as increased access to the Connecticut River. The largest single owner on the South Hadley section of the Mount Holyoke Range, the Massachusetts DCR, included in its GOALS (Appendix B) recommendations for continued purchase of lands within the “ultimate acquisition boundary”, as well as for expansion of the local trail network around the regionally significant Metacomet-Monadnock Trail which runs along the spine of the mountain.

The Golf Commission, which operates the Ledges Municipal Golf Course in concert with other community boards and commissions, is focused on completion of the course’s facilities and maximizing the use of the facility by the community. As such, the Commission has identified completion of a permanent clubhouse as the top facility priority. At the same time, while protecting the course, it has sought to open the facility to other recreational purposes. A permanent clubhouse could provide additional opportunities for such non-season uses.

The Bicentennial Canal Park Committee has identified a variety of needs and opportunities. Chief among these needs and opportunities are expansion of the area covered by the Bicentennial Park to include a portion of Cove Island, restoration of a portion of the South Hadley Canal, and development of a Gate House Park near the Texon Building. Achievement of these objectives would increase the passive recreation and tourist-oriented recreation opportunities available in South Hadley.

Since much of the Connecticut River riverfront is inaccessible due, in large part, to the topography and environmental constraints there is a need to examine the provision of access points on the tributaries to the River as an alternative to the River itself.

Both Bachelor and Stony Brooks would provide for these linkages, in particular, non-motorized boats and canoes and is proposed in the five year Action Plan (*see Appendix G, Map 6, Action Plan and Section 9*). However, beaver dams pose major obstacles to providing such access points.

The South Hadley Conservation Commission expressed the need to protect the riparian areas along all waterways in South Hadley, particularly the Connecticut River and Bachelor and Stony Brooks. Protection of the community’s remaining farm land and scenic views are also of interest to the Conservation Commission.

From the public input received over the past 7 years, strong support has arisen for various new facilities (athletic fields, tennis courts, spray parks, etc.). Community support is also strong for protecting the existing conservation areas and expanding the passive recreation opportunities through an expanded trail system and enforcement of

measures to preclude vandalism. Improvements to Buttery Brook and Beachgrounds parks have generated very strong community support.

Sidewalks should be constructed or repaired for walkers, and there should be a dedicated bike path through town, developed in coordination with the regional bikeway system.

Efforts should be made to restore, provide access and make use of the Connecticut River shoreline for both active and passive recreational/open space opportunities. “Mini parks” throughout the Town within the various neighborhoods should be developed and summer programs for arts and crafts and games for school children should be reintroduced in town.

7.4 MANAGEMENT NEEDS, POTENTIAL CHANGE OF USE

Management of the Town’s existing recreation and open spaces and addressing the opportunities which changes in use will offer are significant concerns which must be addressed.

A broad level of concern exists about the extent that land is taken off the tax rolls. In many cases, the impact is minimal, in some cases, the alternative use of the property suggests that conservation of the land is actually a fiscal plus for the town. However, the fiscal impact of public acquisition and use of land raises serious concerns as nearly half of the land in South Hadley is either not taxed or taxed at below full value due to easements, restrictions, etc. This suggests that a strategic view should be taken as to which lands should be given permanent protections and which lands could be used for other purposes.

The landfill offers the most significant short-term and long-term management concern. As the landfill is eventually closed, the Town will need to address the potential offered by completion of the landfill. However, for the landfill to horizontally expand in the short term, it will be necessary to identify a portion of the Bynan Conservation Area which could be added to the landfill with the exchange of some additional land not currently under the Conservation Commission. The Town owns several parcels on the Mount Holyoke Range which are not subject to permanent protection. The Town should consider establishing permanent protection for the land on the Mount Holyoke Range. As the landfill is eventually completed, reuse of the landfill will offer new recreation opportunities, which might include parks and athletic fields.

Meeting the athletic field needs will require the most effective utilization of available land. The most obvious means to meet the needs for athletic fields is to include such fields as part of any new school facility and to consider existing public lands which are already disturbed and could be effectively used for athletic fields.

Development in the western and northern areas of town can be perceived as a threat to the remaining agricultural community and the water supply of District #2. Accordingly,

measures must be taken to assure retention of agricultural land and ensure that development in proximity to the water supply does not have a detrimental effect on the water quality.

Every effort should be made to fully maintain and upgrade where necessary for existing open space and recreational facilities. With limited staffing, maintenance of the facilities is often times inadequate, and adding new facilities without proper maintenance personnel would only worsen the situation. One exception to this is to give consideration to outdoors ice skating areas and/or cross country skiing/hiking trails during the winter as part of the Ledges Golf Course developed on approximately 244 acres of land off Alvord Street.

SECTION 8 - GOALS AND OBJECTIVES

Many of the goals contained in the original Open Space Plan are still important, continually need to be addressed and have been included in this current plan. Reflecting the growth in residents and often stated needs for more active recreational opportunities, some new goals and objectives related to development of active recreational opportunities have also been included in this update.

Section 6 stressed the importance of establishing a strategy to preserve, protect and expand the existing cultural and natural resources of the Town and to maintain and expand the available recreational opportunities available in the Town. The overall goal and the ensuing goals and objectives outlined in this section resulted from comments made throughout the public participation process and a complete review of the original Open Space Plan.

Goal 1: Support and promote both resource preservation and passive recreation along the Connecticut River and its tributaries.

Objective 1a: Establish trail links to the shoreline of the Connecticut River from other point of access (i.e. roadways and other trails).

Objective 1b: Promote community involvement with river and stream clean-up efforts.

Objective 1c: Develop a riverside park and trails in South Hadley Falls below the dam as proposed in the Balmori Study.

Objective 1d: Incorporate the historical character and role of the Canal into the reuse of the Texon building and properties north of the Texon building along the riverfront.

Goal 2: Continue protection of existing water resources including wetlands, aquifers and their recharge areas, streams, ponds and floodplains.

Objective 2a: Promote education of wetlands' environmental significance.

Objective 2b: Work to acquire additional lands on the Mount Holyoke Range for permanent protection.

Objective 2c: Work with Regional, State and Federal agencies to continue Connecticut River upgrade to Class B.

Objective 2d: Work to develop and protect greenways along rivers and streams through land acquisition or easements.

Objective 2e: Establish requirements in town bylaws which encourage and require developers to provide greater protection for water resources and related environmental assets.

Objective 2f: Develop streamteams to assist in protection and enhancement of wetlands and waterways.

Goal 3: Provide increased passive recreation and conservation activities in the Mount Holyoke Range.

Objective 3a: Increase access to range in the central part of the Mount Holyoke Range within South Hadley (Pearl Street).

Objective 3b: Acquire additional land in the Mount Holyoke Range.

Goal 4: Increase active recreation opportunities for all areas of Town.

Objective 4a: Utilize existing Town-owned lands for recreational use (Town Farm, BATTERY Brook Park, and the Beachgrounds Park).

Objective 4b: Acquire additional lands/easements for active recreation purposes (Town Farm & BATTERY Brook.)

Objective 4c: Promote increased active recreation opportunities for young children (i.e. neighborhood playgrounds).

Objective 4d: Work with neighboring towns to promote regional links to various town natural and cultural attractions (bike path along old trolley line, hiking trails along utility corridors, etc.).

Objective 4e: Establish a marked bicycle route through Town, linked to other bikeways in adjoining Towns.

Objective 4f: Develop more fields for team and group recreational activities.

Objective 4g: Establish municipal tennis and other alternative recreational facilities.

Goal 5: Increase citizen participation in preserving cultural and natural resources.

Objective 5a: Increase citizen interest in local cultural and historical significance of South Hadley.

Objective 5b: Encourage interaction among the many committees whose interests work toward a common goal (e.g. Historical Society, Bicentennial Canal Park Committee).

Objective 5c: Continue to develop educational materials on town heritage.

Goal 6: Work with current and future developers for the provision of additional open space and recreation opportunities.

Objective 6a: Strengthen provisions within Town by-laws for incorporation of open space and recreation amenities within proposed subdivisions.

Objective 6b: Work harmoniously with developers to encourage open space and recreation facilities within proposed developments for the residents of the developments and the general public.

Objective 6c: Continue interdepartmental efforts (Planning Board, Conservation Commission, etc.) efforts to work together in developing ways of protecting choice agricultural land and open space land.

Goal 7: Expand conservation lands available for passive recreation.

Objective 7a: Work to acquire land adjoining existing protected lands.

Objective 7b: Develop more trails on conservation land.

Objective 7c: Provide wheelchair accessible trails.

Objective 7d: Develop a hiking/biking trail system that provides access to the Connecticut River and through and from the Bachelor Brook/Stony Brook Conservation Resource Area to the Mount Holyoke Range.

Objective 7e: Maintain/improve existing walking trails in Conservation Areas (markings, maps, signage, trail work, etc.)

Objective 7f: Protect Conservation Areas from motorized vehicles.

Goal 8: Promote preservation of the remaining farmland and continued farm operations.

Objective 8a: Adopt a Right to Farm Bylaw.

Objective 8b: Encourage greater use of the APR Program to protect the limited remaining farmland.

SECTION 9 - FIVE-YEAR ACTION PLAN

1. ACCOMPLISHMENTS

The 2007-2012 Action Plan is based to a large degree on the successful completion of the past five-year Action Plan. Many successes were achieved under that plan including:

- Acquisition of the 284-acre Bachelor Brook/Stony Brook Conservation Resource Area off Ferry Street and Hadley Street.
- Development of the 18-hole municipal golf course and driving range.
- Expansion of the Bynan and Bagg-Pierce Conservation areas.
- Adoption of a Wetlands Bylaw which protects wetlands and vernal pools.
- Development of athletic fields at the Town Farm and at the Middle School and High School.
- Community development efforts to develop plans for tennis, spray park, and other recreational facilities.
- Adoption of Zoning Bylaw measures which have increased the opportunity to preserve open space while accommodating residential development and/or maintaining farm operations.
- Expansion of the DCR land holdings on the Mount Holyoke Range through the acquisition of 600 acres from Fire District #2 and several other smaller parcels.
- Preparation of the Riverfront Park Plan for the HG&E property south of the Texon Building
- Preparation of redevelopment plans for the Buttery Brook Park and the Beachgrounds Park.
- Annual maintenance and cleanup of several well-used Conservation Commission sites, including Titus Pond, Black Stevens and Bynan Conservation Areas, and the Bagg-Pierce Wildlife Sanctuary.

While not complete, this list of accomplishments over the past five years highlights the major accomplishments that have been effected as a result of the Town's Open Space and Recreation Plan titled "The Range and the River". What follows is the 2007-2012 Action Plan which provides guidance and direction for the preservation and expansion of land uses that make South Hadley a "Great Place to Live". The Action Plan lists numerous proposed actions, some of which would be undertaken by the Town while others would be supported by the Town, but undertaken by private organizations.

2. 2007-2012 FIVE-YEAR ACTION PLAN

<i>Proposed Actions</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>
1. Clean up one (1) Conservation land site	X	X	X	X	X
2. Identify ownership of unknown properties and establish neighborhood playgrounds where possible	X	X			
3. Maintain or reestablish access to Stony Brook for canoeing		X		X	
4. Provide and maintain access on Bachelor Brook for canoeing	X		X		X
5. Identify and find funds to purchase outright or to establish other protective measures for one piece of property for Conservation use			X		X
6. Establish an additional trail across the Mount Holyoke Range for hiking, riding, biking, and skiing					X
7. With the Tree Warden, acquire small native trees, shrubs to be grown and transplanted	X	X	X	X	X
8. Prioritize acquisition potential for lands of interest for Conservation Commission/ Selectboard for conservation and/or recreation use	X	X			
9. Complete Phase 2 of the Ledges Golf Course/Multi-purpose Recreational Facility	X	X			
10. Work with the Planning Board and Conservation Commission to produce and maintain a series of GIS maps detailing open space and recreational land	X	X	X	X	X
11. Redevelop Buttery Brook Park with land acquisition field improvements	X	X	X	X	X
12. Establish recreational needs to be developed at the Town Farm site	X	X	X	X	X
13. Expand facilities and recreational opportunities in the Beachgrounds Park	X	X	X	X	X
14. Acquire additional land for athletic fields and establish two more athletic fields			X	X	X
15. Develop and adopt Management Plans for Conservation Areas.	X	X	X	X	X

NOTE: See Appendix G, Map 6, Action Plan

SECTION 10 - PUBLIC COMMENTS

SECTION 11 - REFERENCES

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APPENDIX A

LAND PROTECTION METHODS

1. ACQUISITION

Fee simple acquisition is considered to provide the strongest measure of protection. What is purchased is the complete ownership rights or fee simple interest in the land. Most often, it will be necessary to pay the entire value of the property. In some cases, however, the owner will agree to a bargain sale of the fee simple interest for a reduced sale price. In this case, the advantage to the seller includes the possible federal income tax deduction of the difference between full and fair market appraised value and the amount actually received for the land. Since certain specified rules apply as to documentation of appraised value and limitations on annual deduction amounts, it is recommended that interested owners seek legal and/or financial planning advice before choosing the bargain sale alternative. There is an important side to any discussion about transfer of the entire fee of property. Since both the government and a public entity (not private) are currently exempt from real estate tax liability, acquisition in fee may be less of an advantage to the local community than some other methods of protection.

As an alternative to outright purchase, a public entity may, instead, choose to acquire only a partial interest, most typically the development rights, of a given property. The most common forms of a partial interest are easements and deed restrictions. Examples of partial interests are the conservation restriction, the historic restriction and the agricultural preservation restriction. The conservation restriction, also known as a “conservation easement” or “purchase of development rights”, is a prohibition of certain uses of land placed against the deed of a property. Beginning in 1969, the Massachusetts conservation restriction attained special status under the authorization of MGL Chapters 31-33, whereby the value of the restriction will now qualify for federal tax benefits upon formal local and state approval.

Taking the tax deduction aspect of land transfer a step further, an owner may choose to donate the entire fee simple interest of property as a charitable gift of land to a public or qualified non-profit conservation group. Typically, most conservation organizations will not require that a sum of money termed an “endowment”, accompany land donation for the purpose of covering maintenance costs associated with land ownership. This cost item, however, can certainly be negotiated.

2. ZONING

Zoning by its very nature, is restrictive. It has the force of case law and precedent, beginning with the landmark 1928 case, *Village of Euclid, Ohio v. Ambler Realty Co.* In this US Supreme Court decision, the validity of a suburban Cleveland zoning

ordinance was upheld over claims by a local real estate company that the zoning would require compensation.

Through the years since, zoning has been required to merely meet the public interest test to be legal. Land use, floodplain, wetlands and aquifer zoning are but some of a group of development prohibitions which meet resource protection and public safety needs.

The so-called “creative development” techniques such as open space community development, also know as cluster development, Flexible Residential Development, and Planned Unit Development, are zoning options that the community makes available to the landowner. Appendix E is another example of a “creative development” technique that involves farmland and open space conservation and development by law.

3. TAX RELIEF INCENTIVES:

The General Laws offers Massachusetts landowners three incentive programs designed as temporary protection for open space and recreation land. These are Chapter 61 (Classification and Taxation of Forest Lands and Forest Products), Chapter 61A (Assessment of Agricultural and Horticultural Land), and Chapter 61B (Recreation Land). Chapter 61, the so-called “Forest Tax Law”, is a program by which owners of qualified forestland are allowed a 95% reduction of the full and fair market value of their land, in exchange for implementation of a state-approved 10-year forest management plan. Chapter 61A offers the same degree of protection for agricultural and horticultural uses requiring a yearly application based on farming yields. Chapter 61B is designed to reduce local property tax assessment on lands devoted to various recreation uses. Each “chapter” program offers the local community a right of first refusal on any bona fide offer to sell land which is being removed from these uses.

APPENDIX B

LAND PROTECTION PROGRAMS

1. THE CONNECTICUT VALLEY ACTION PROGRAM

Established by the Massachusetts Legislature in 1984 with \$2 million in seed money, this State Department of Conservation and Recreation (DCR) initiative is charged with designing a coordinated plan to ensure appropriate use and management of the Connecticut River, one of New England's most distinctive landscapes, and its related lands.

The planning approach designed to meet the goals of the program included dividing the Massachusetts portion of the Connecticut River into four segments or "reaches", each with a particular set of issues identified through the public participation process. For example, meeting the needs of Reach 3 communities, the primarily agricultural Hampshire County stretch of the river, will require different tools than those of the urban Reach 4, south of the Holyoke Dam. Land protection may be the predominant concern of the former, while the latter may require river clean-up funding for larger-scale recreation demands. The Action Program also provides technical assistance to local riverside communities on regional issues such as wetland and watershed protection, riverside zoning and development, and open space planning. The Connecticut Valley Action Program continues to receive funding for acquisition of land and conservation restrictions along the Connecticut River for the purpose of protection of this valuable New England resource.

Additional information on the Connecticut Valley Action Program can be obtained through contact with DCR at 136 Damon Road, Northampton, MA 01060 (413-586-8706).

2. THE MOUNT HOLYOKE RANGE GOALS PLAN

The Department of Conservation and Recreation Mount Holyoke Range State Park GOALS Plan was formally adopted by the DCR Board in 1987. GOALS was established as a means of (1) supplementing DCR's "Long Range Capital Outlay Plan" for specific land acquisition and facilities development, and (2) establishing management objectives recommendations. Some of the major recommendations currently in effect for the Mount Holyoke Range with implications for South Hadley are listed below, as follows:

- *to develop a trail system utilizing the existing trail from Route 47 north along Dry Brook to Taylor Notch, and at that point constructing a trail south, across Dry Brook to "hill 721".*

- *to develop a bikeway along the abandoned trolley right-of-way located east of the Notch Visitors Center to run approximately parallel with Route 116, linking the existing Hampshire College-to-UMASS bikeway with the Mount Holyoke College Campus.*
- *to continue the policy of purchasing lands along the Mount Holyoke Range within the ultimate acquisition boundary. Parcels located outside the prescribed area will be reviewed for purchase by the HRCAC on a willing seller basis. The purpose of such acquisitions will continue to be protection of scenic views of the Range.*

3. THE MASSACHUSETTS FOREST LEGACY PROGRAM

In 1990, the US Congress created a “Forest Legacy” program as part of that year’s Farm Bill legislation. The program was initiated as a response to the threat of continuing conversion and fragmentation of forestland in urbanized states such as Massachusetts.

The purpose of Forest Legacy is protection for forestland which has been identified as being important to the maintenance of traditional forest uses such as product harvesting and recreation. The intention is for acquisition of permanent conservation easements from willing forestland owners, by the U.S.D.A. Forest Service, through the work of various local land conservation trusts. In the Fall of 1991, a state committee was formed to review Forest Legacy Area nominations and draft a Massachusetts Forest Legacy Needs Assessment which is required for matching-fund eligibility. On September 30, 1992, the Assessment was submitted for approval to the Forest Service. Included in this document are a total of 16 Forest Legacy Area nominations reviewed by the state committee, one of which comprise a block of forestland linking the Mount Holyoke Range with the Connecticut River (see Figure 6, Connecticut Valley Forest Legacy Area).

Additional information on the Massachusetts Forest Legacy Program can be obtained from the Southern New England Forest Legacy Program – The Environmental Institute, Blaisdell House, University of Massachusetts, Amherst, MA 01003 (413-545-5525).

4. THE AGRICULTURAL PRESERVATION RESTRICTION PROGRAM

Essentially a special type of conservation restriction, the APR is a legal prohibition on the non-agricultural conversion or development of a parcel for the purpose of permanently preserving the land for agricultural use. The original legislative authorization for this program was passed in 1977 as MGL Chapter 780. Funding is authorized by the legislature to be used by the Massachusetts Department of Food and Agriculture (DF&A) for the purchase of these restrictions from willing farmers. Restrictions can also be donated by owners of certain productive farmland to the DF&A or non-profit land conservation’s trusts. APR donations are subject to approval at both the local and state levels.

Additional information on the Agricultural Preservation Restriction Program can be obtained from the APR Program 142 Old Commons Road, Lancaster, MA 01523 (508-792-7712).

FIGURE 6

THE CONNECTICUT VALLEY FOREST LEGACY AREA

(Available for Review in Planning Board Office)

APPENDIX C

THE AMERICAN FARMLAND TRUST **COST OF COMMUNITY SERVICES STUDY**

Much of what passes for equitable property valuation theory these days is a belief that residential development will always increase the tax base of a community by bringing in more tax dollars. According to Northeastern Office of The American Farmland Trust (AFT) in Northampton, Massachusetts, however, this logic just does not stand up to the actual numbers.

The AFT has developed a fiscal evaluation model called the Cost of Community Services Study, which provides a “snapshot”, of the actual cost to local taxpayers of various land uses based on an analysis of both revenues, which typically include taxes, unallocated local receipts, any state aid, and free cash, and expenditures, costs for services such as fire, police and education. The benefits and costs are then allocated to four land use categories: residential, commercial, industrial and farm/open land. A ratio is then established for each land use which defines the actual cost in services for each dollar of revenue generated by that use.

Results of the AFT studies for communities in Massachusetts show that farm/open space use is a relative “bargain”. According to these studies the median ratio of dollars generated by residential development to services required to carry this use calculated out to \$1: \$1.12 for three Massachusetts communities (Gill, Agawam and Deerfield). In comparison, however, open space, farmland and forestland proved to cost these towns an average of only \$.29 for every revenue dollar collected.

Information on the work of the American Farmland Trust can be obtained by writing AFT – Herrick Mill, One Short Street, Northampton, MA 01060.

APPENDIX E

FARMLAND OPEN SPACE PROTECTION

One of the most vexing problems facing small towns today is the rate at which farmland is being developed for residential use. Such conversions devastate rural character, and further compromise an already beleaguered industry. The meadows in which children once played or cows once grazed are being carved into house-lots throughout the length of the Valley. Long-term residents see their towns changing at an alarming pace and feel helpless to break the pattern of conventional suburban sprawl (often inadvertently encouraged by “protective” bylaws containing development standards inappropriate to rural areas).

One of the most common reactions to new development is to increase the minimum residential lot size, in the mistaken belief that, as new homes are spread farther apart, the town’s open rural character will be retained. Although this is a laudable goal, this method often produces the opposite result, with remaining open land being subdivided at an even faster rate. To worsen the situation, such developments nearly always consume the entire parcel being sold, leaving no residual open space for farming, natural enjoyment or rural beauty.

The traditional character of Massachusetts’s towns has evolved gradually over several centuries, during which time farmsteads and village centers grew slowly and organically, without the straitjacket of standardized land-use regulations. Rural towns often contain several villages where development is moderately dense, with the remainder of the land dotted by farms. If the goal is to maintain town character, then a method must be found to preserve agricultural land and open space surrounding natural groupings of residential development.

Two approaches to farmland preservation in Massachusetts which have enjoyed some success over the past decade are: 1) the State’s Agricultural Preservation Restriction (APR) program (through which development rights to agricultural land are bought and held by the Commonwealth, with future land use limited to agriculture); and 2) various land trusts, which function in a broadly similar manner, utilizing private funds and land donations. However, both of these programs are seriously limited by shortage of cash and escalating land prices all across the State. For example, the Commonwealth’s investment of \$45 million over the last ten years has protected 18,500 acres of farmland, which accounts for only 3% of this non-renewable resource. Most of the remaining 97% lies unprotected and zoned for conventional development.

What is urgently needed is a practical, low-cost approach to land conservation which simultaneously preserves farmland and significant open space, while also allowing landowners full equity value for residential subdivision of their land. A “Farmland/Open Space Conservation and Development Bylaw” which allows for the same number of lots as under conventional subdivision permits sellers to receive full value for their land. It also requires the setting aside of half the acreage for agricultural or open space uses, in perpetuity, thus meeting the second goal as well.

In addition, road and utility construction is generally reduced significantly, thereby saving on development costs and public expenditures for snowplowing and periodic repaving.

DISTRICTS FOR IMPLEMENTATION

Two types of districts may be refined by towns for the implementation of this type of bylaw. The first are areas in which farming is predominant. These may be identified by overlay maps locating the soils which are most suitable for agriculture, land which is currently being farmed, and land already under the Agriculture Preservation Restriction program. The opinions of farmers regarding which areas are most important to safeguard should be solicited and considered carefully.

A second possible type of district is an open space protection district. This type of area, if not intensively farmed, would have other scenic or natural resources worth protecting. Criteria for refining this type of zone include: large tracts of undeveloped land; aquifer recharge areas; sites identified under the Massachusetts Natural Heritage program (administered by the Massachusetts Department of Fisheries and Wildlife); areas of scenic beauty within the town (perhaps as identified in the Massachusetts Landscape Inventory, prepared by the Massachusetts Department of Environmental Management in 1982); and areas of historical or cultural interest. These criteria, either singly or as a group, are important considerations in land preservation.

These districts should be mapped with a written explanation of why the boundaries were drawn and why neighboring lands were either included or excluded. This would strengthen the case for implementing the bylaw, and would make it easier to defend, if the zoning boundaries are legally challenged.

APPENDIX F

ADA ACCESSIBILITY **SELF-EVALUATION INVENTORY**

Pursuant to the Section 504 Guidelines of the Rehabilitation Act of 1973 Self-Evaluation, the following documents and narrative address the Administrative Requirements (Part I) and the Program Accessibility (Part II) documentation.

Part I Administrative Requirements – the following documents are attached:

- Document 1: Designation of ADA Coordinator
- Document 2: Application Forms
- Document 3: Public Notifications – Non-Discrimination, Bulletin Board and Recruitment Materials
- Document 4: Grievance Procedures (Excerpts from Personnel Policies)

Part II Program Accessibility

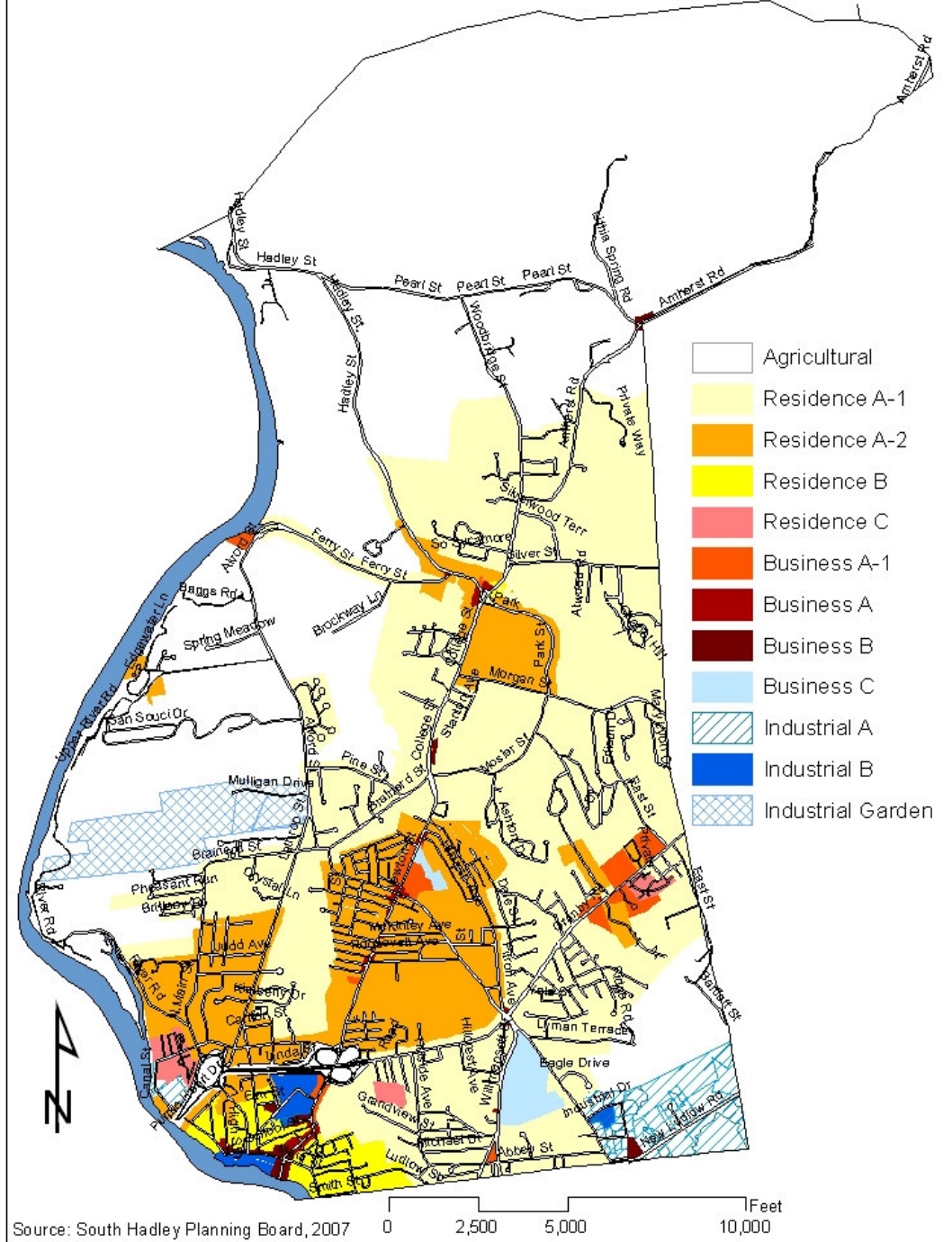
The only properties inventoried and assessed as to accessibility are those managed by the Conservation Commission, Recreation Commission, Golf Commission, or Canal Park Committee which entities operate the Town's recreational and open space programs and facilities.

- The Recreation Commission does not maintain any properties, all facilities utilized by the Recreation Commission are maintained by either the School Committee or the Parks Department. The Commission is working to redevelop the Beachgrounds Park to enhance its accessibility.
- The Golf Commission operates/maintains the Ledges Golf Course. This is a multi-use facility which operates as a golf course for approximately 7-8 months each year. A pedestrian path provides access through out the course.
- The Conservation Commission maintains nearly 1,200 acres of natural open space. Only a few of these areas have marked walking trails. To the extent feasible, the Commission continues to work to make these trails accessible.
- The Canal Park Committee works to maintain the Bicentennial Canal Park with assistance from the Parks Department and Holyoke Gas & Electric. The park includes an overlook which is accessible.

APPENDIX G
REQUIRED MAPS

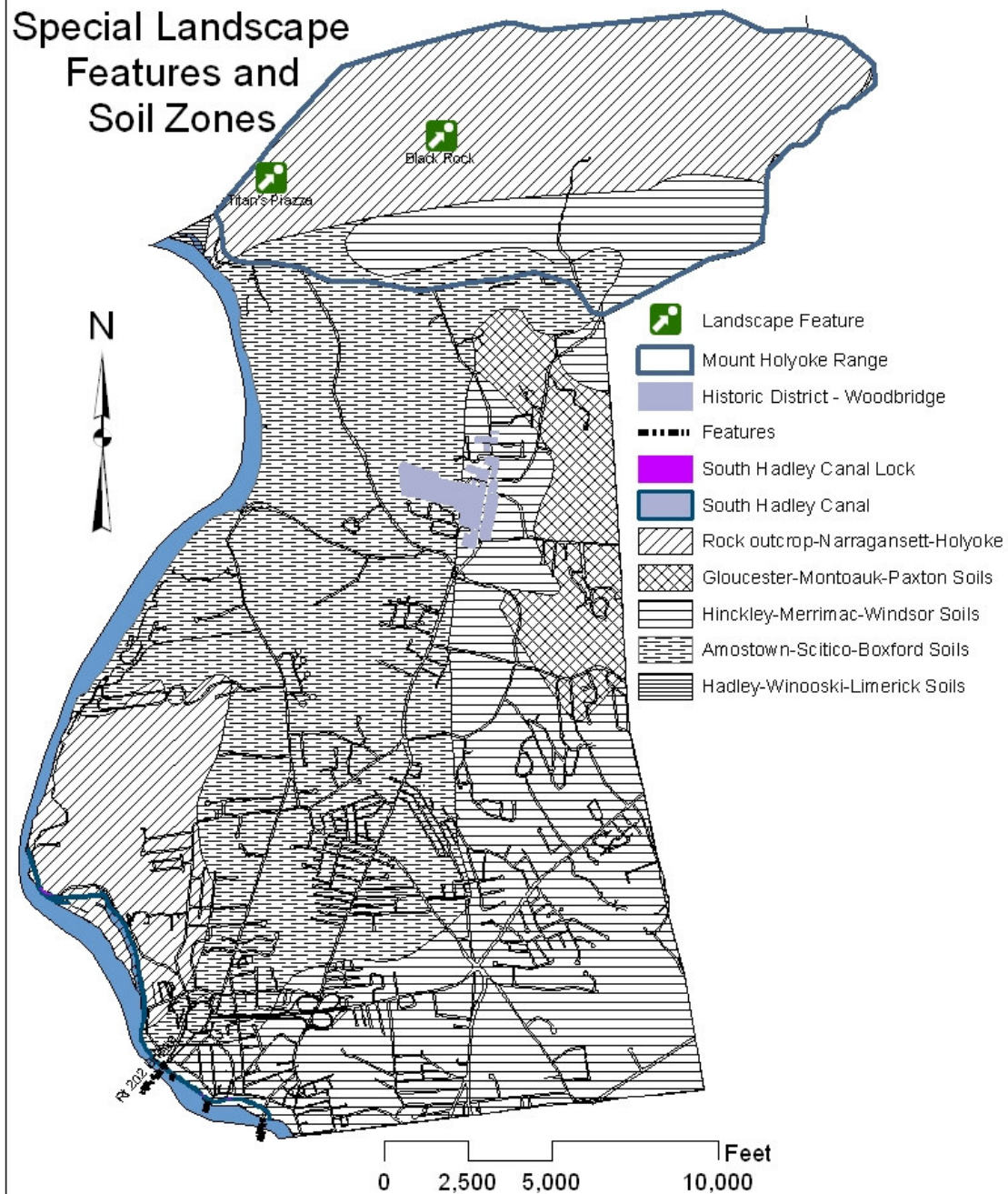
- Map G-1 Zoning Map
- Map G-2 Special Landscape Features and Soils
- Map G-3 Water Resources
- Map G-4 Water Supply Overlay Protection District
- Map G-5 Protected and Unprotected Open Space Lands
- Map G-6 Action Plan

MAP G-1 South Hadley Zoning Map - 2007



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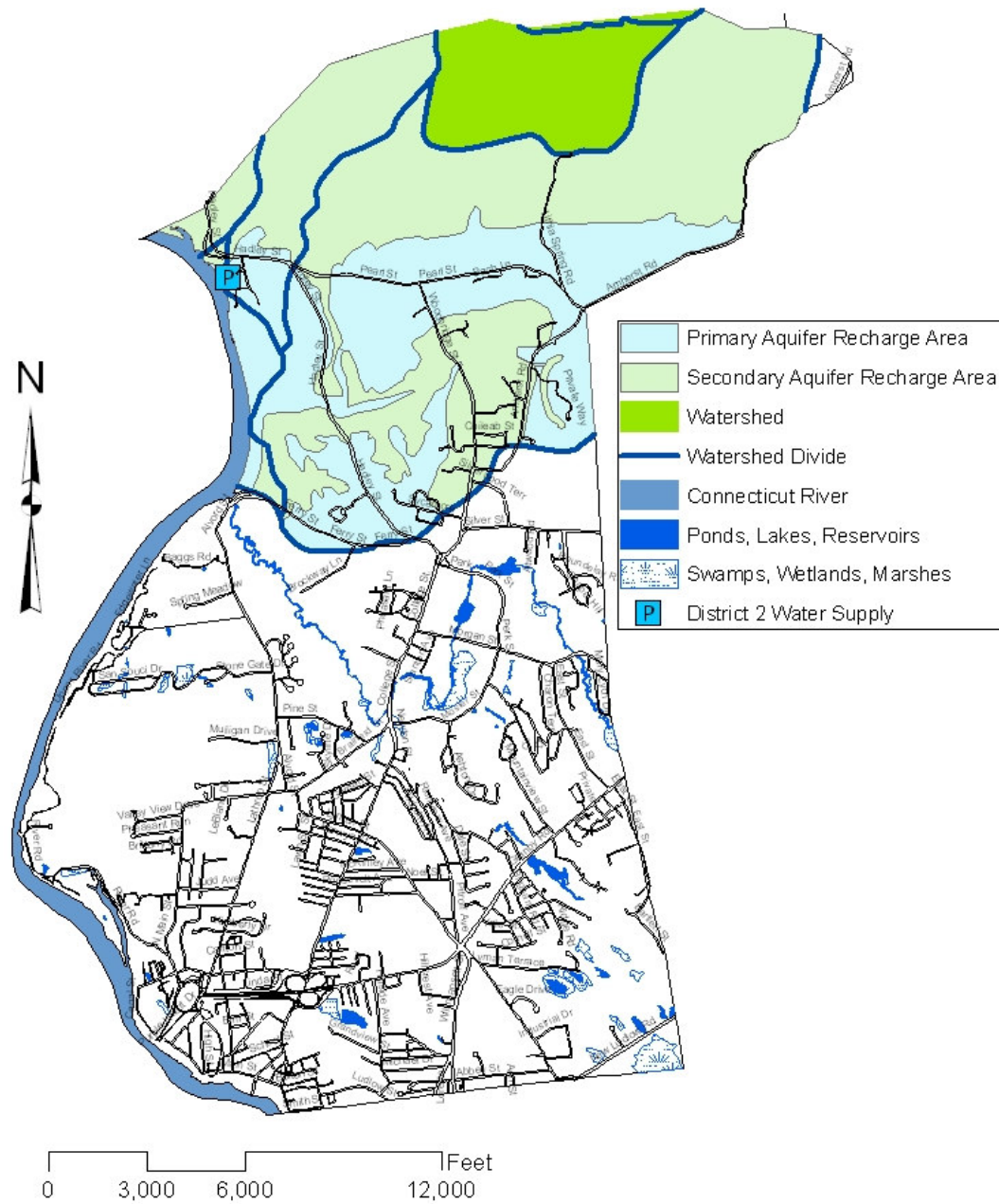
MAP G-2 SOUTH HADLEY Special Landscape Features and Soil Zones



Source: South Hadley Planning Board, 2007

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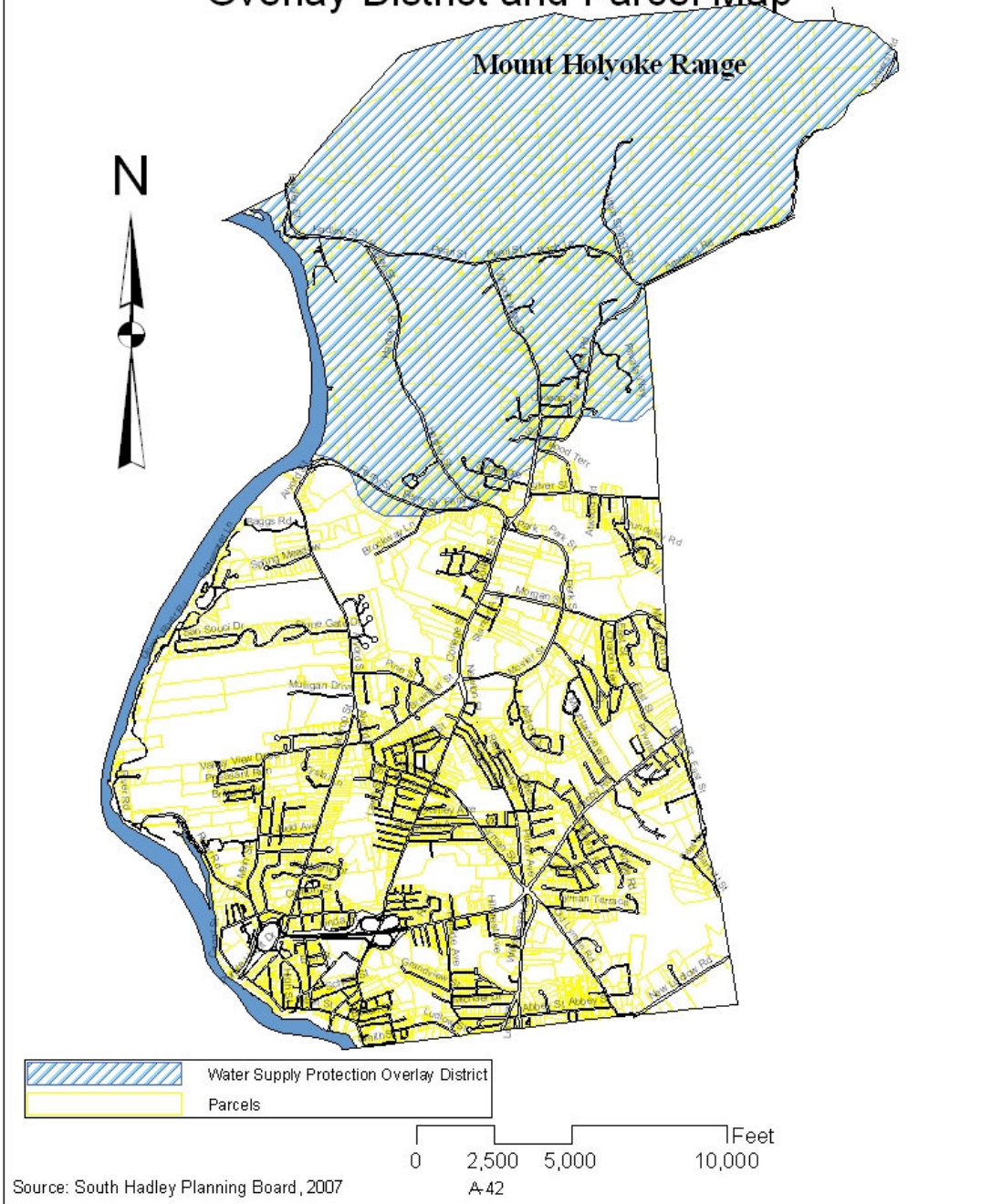
MAP G-3 SOUTH HADLEY - Water Resources



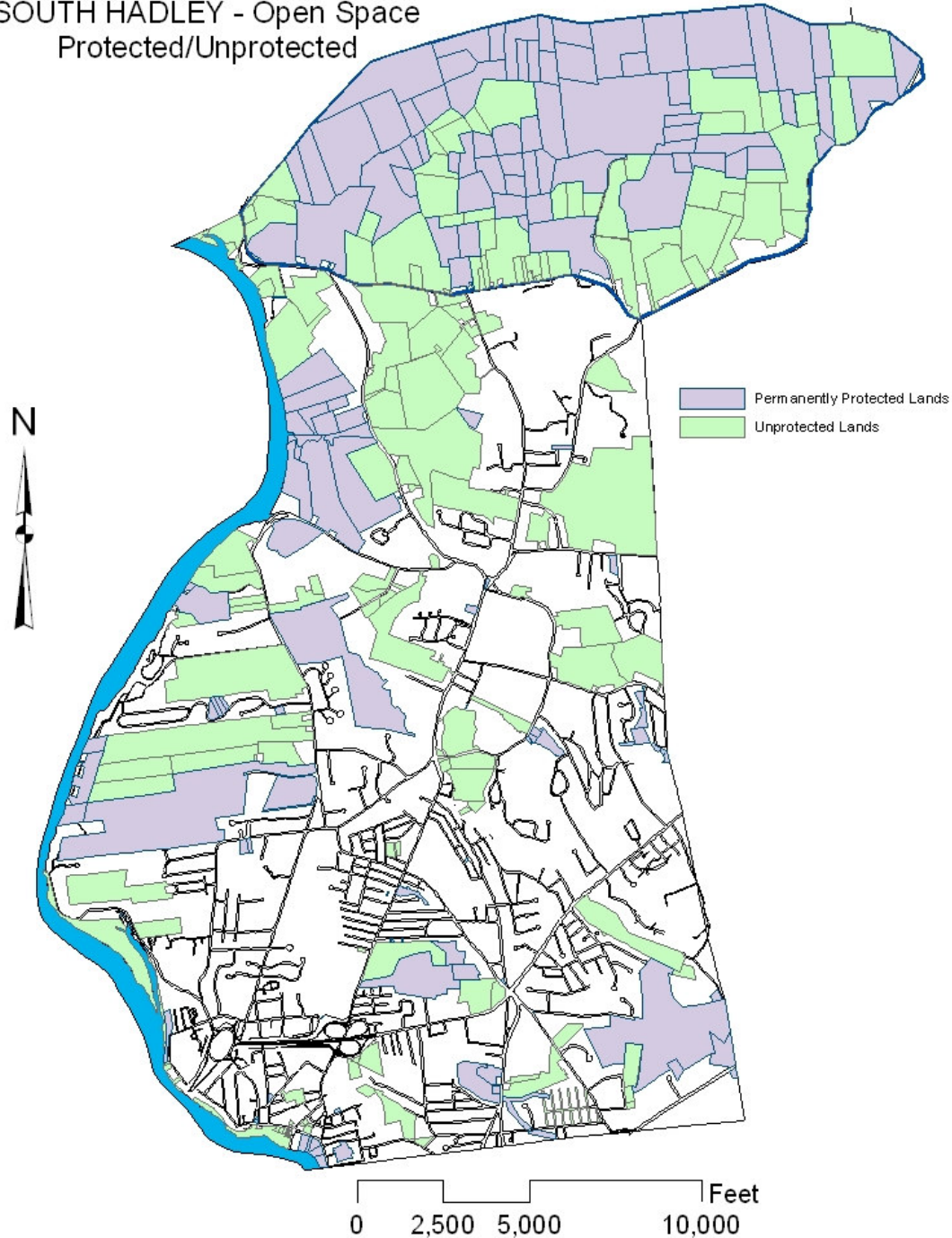
Source: South Hadley Planning Board, 2007

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MAP G-4 SOUTH HADLEY -Water Supply Protection Overlay District and Parcel Map



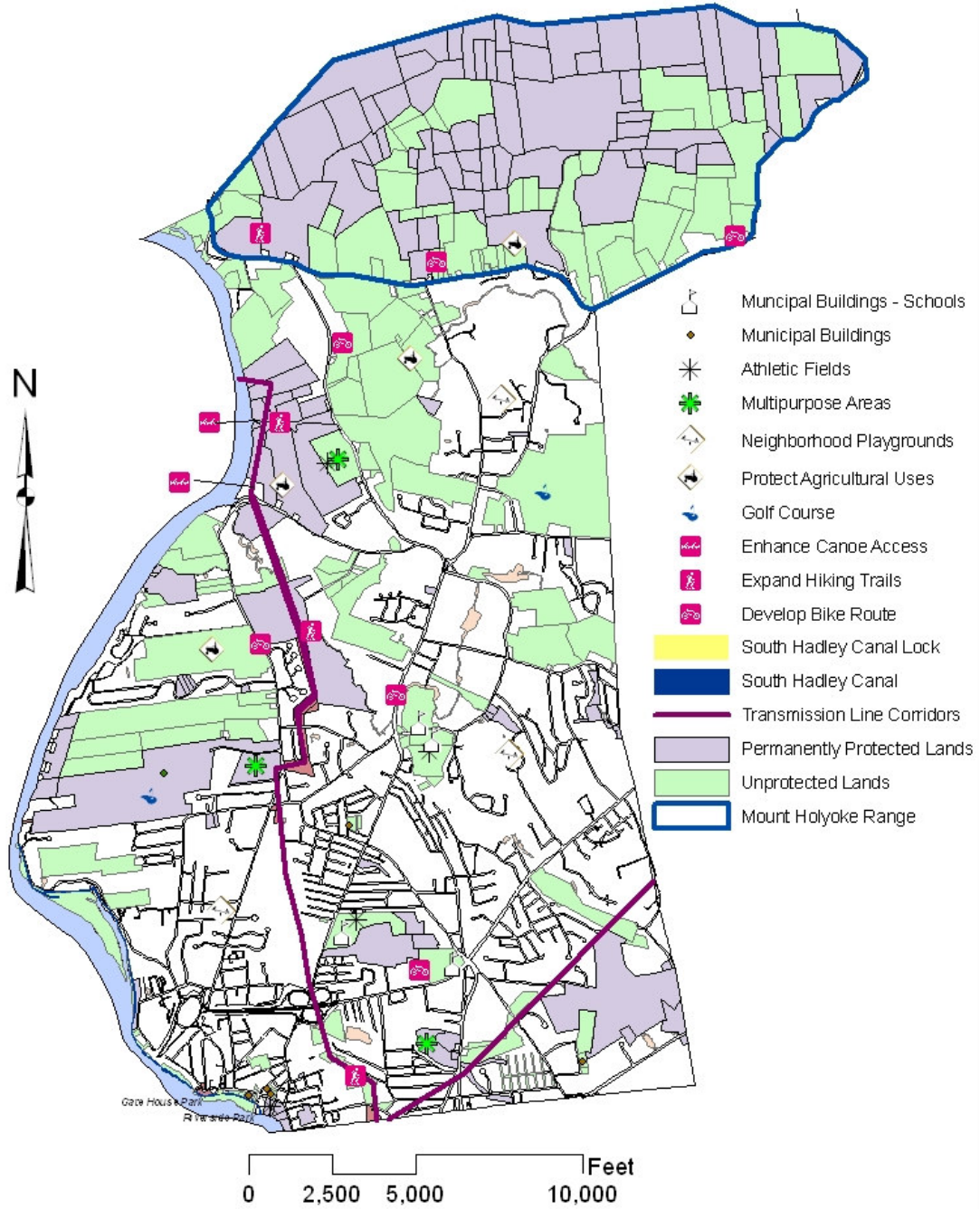
MAP G-5
SOUTH HADLEY - Open Space
Protected/Unprotected



Source: South Hadley Planning Board, 2007

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MAP G-6 SOUTH HADLEY - Action Plan



Source: South Hadley Planning Board, 2007

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APPENDIX H

OPEN SPACE INVENTORY

H-1 Protected Open Space

(Available for Review in Planning Board Office)